GENERAL NOTES

APPLICABLE TO ALL DRAWINGS UNLESS NOTED OR SHOWN OTHERWISE

GENERAL NOTES

1. Interpretation of Drawings & Specifications
   a) For convenience, specifications have been prepared for this project and are arranged in several sections, but such separation shall not be considered as the limits of the work required of any separate trade. The terms and conditions of such limitations are wholly between the contractor and his subcontractors.
   b) In general, the working details will indicate dimensions, position and kind of construction, and the specifications, qualities and methods. Any work indicated on the working details and not mentioned in the specifications, or vice versa, shall be furnished as though fully set forth in both. Work not particularly detailed, marked or specified, shall be the same as similar parts that are detailed, marked or specified. If conflicts occur on drawings and/or specifications, the most expensive materials or methods will prevail.
   c) Should an error appear in the working details or specifications or in work done by others affecting this work, the Contractor shall notify the Architect at once and in writing. If the Contractor proceeds with the work so affected without having given such written notice and without receiving the necessary approval, decision or instructions in writing from the Owner, then he shall have no valid claim against the Owner, for the cost of so proceeding and shall make good any resulting damage or defect. No verbal approval, decision, or instruction shall be valid or be the basis for any claim against the Owner, its officers, employees or agents. The foregoing includes typical errors in the specifications or notational errors in the working details where the interpretation is doubtful or where the error is sufficiently apparent as to place a reasonably prudent contractor on notice that, should he elect to proceed, he is doing so at his own risk.
2. Construction shall conform to all applicable codes and regulations.
3. Shop Drawing Note:
   a) Shop Drawings shall be submitted in the form of one sepia transparency and two blue line prints of each sheet.
   b) The purpose of Shop Drawings submittals by the Contractor is to demonstrate to the Structural Engineer that he understands the design concept by indicating which material he intends to furnish and install, and by detailing the fabrication and installation methods he intends to use.
   c) Prior to fabrication, Shop Drawings shall be submitted for review by the Structural Engineer. Shop Drawing submittals shall include, but are not necessarily limited to, structural steel, reinforcing steel, & glued laminated beams.
   d) Prior to submission the Contractor shall review all submittals for conformance with the Contract Documents and shall stamp submittals as being "Reviewed for Conformance".
   e) Shop Drawings submittals processed by the Structural Engineer are not Change Orders.
   f) Any detail on the Shop Drawing that deviates from the Contract Documents shall clearly be marked with the note "This a change".
   g) Shop drawings or calculations submitted for review that require resubmittal for re-review shall be billed hourly for such time to the General Contractor. Re-review will not proceed without written approval from the General Contractor for additional engineering review services.
4. Safety Note:
   a) It is the Contractors responsibility to comply with the pertinent sections, as they apply to this project, of the "Construction Safety Orders" issued by the State of California latest edition, and all OSHA requirements.
   b) The Owner and the Structural Engineer do not accept any responsibility for the Contractor's failure to comply with these requirements.
   c) The Contractor shall be responsible for adequate design and construction of all forms and shoring required.
5. The contractor shall notify the Architect and Structural Engineer where a conflict or discrepancy occurs between the Structural drawings and any other portion of the Contract Documents or existing field conditions. Such notification shall be given in due time so as not to affect the construction schedule. In case of a conflict between Structural drawings and specifications the more restrictive condition shall take precedence unless written approval has been given for the least restrictive. Contractor shall verify all dimensions with Architectural prior to commencing any work.
6. Where no specific detail is shown, the construction shall be identical or similar to that indicated for like cases of construction on this project. Should there be any question, contact the Architect and Structural Engineer prior to proceeding.
7. When construction attaches to an existing building, a complete set of drawings of the existing building shall be kept on the job site. Contractor to obtain these drawings from the Owner.
8. Contractor shall provide an allowance equal to 2% of the bid for structural steel, misc. iron and reinforcing steel to be used at the discretion of the Structural Engineer. Unused amount to revert to the Owner upon completion of the job.
9. Any substitutions for structural members, hardware or details shall be reviewed by the Architect and Structural Engineer. Such review will be billed on a time and materials basis to the General Contractor with no guarantee that the substitution will be allowed.
10. Do not scale drawings. Contact the Architect or Structural Engineer for any dimensions not shown.
11. These drawings are not complete until reviewed and accepted by local Building Officials and signed by the Owner and the Structural Engineer.

ABBREVIATIONS

AB	Anchor Bolt	MI	Malleable Iron
abv	Above	(n)	New
blw	Below	NIC	Not in Contract
bof	Bottom of Footing	NS	Near Side
btwn	Between	nts	Not to Scale
cc	Center to Center	NW	Normal Weight
CJ	Control Joint	OH	Opposite Hand
clr	Clear	OSB	Oriented Strand Board
CMU	Concrete Masonry Unit	pc	Piece
CNJ	Construction Joint	pp	Partial Joint Penetration
cont	Continuous	PT	Pressure Treated
contr	Contractor	rwd	Redwood
cp	Complete Joint Penetration	SC	Slip Critical
csk	Countersink	sim	Similar
DF	Douglas Fir	SMS	Sheet Metal Screw
DL	Dead Load	SP	Structural Plywood
do	Ditto	stfnr	Stiffener
dwg	Drawing	stgrd	Staggered
(e)	Existing	t&b	Top & Bottom
EF	Each Face	t&g	Tongue & Groove
EJ	Expansion Joint	thrd	Threaded
El	Elevation	tn	Toe Nail
EN	Edge Nailing	to	Top of
eos	Edge of Slab	toc	Top of Concrete (slab uno)
eq	Equal	tof	Top of Footing or Top of Framing
EW	Each Way	tos	Top of Steel
EWEF	Each Way Each Face	tow	Top of Wall
FB	Face of Block(or Brick) or Flat Bar	TS	Tube Steel
FC	Face of Concrete or Framing Clip(Simpson A35)	uno	Unless Noted Otherwise
FF	Finish Floor	w/	with
FS	Face of Stud or Far Side	w/o	without
ga	Gauge or gage	wp	Work Point
glb	Glued Laminated Beam	WS	Wood Screw
hdr	Header	WWF	Welded Wire Fabric
HSB	High Strength Bolt	℄	Centerline
ht	Height	PL	Plate
jh	Joist Hanger	WF	Wide Flange
LL	Live Load	#	Number or Pounds
LLH	Long Leg Horizontal	sq	Square
LLV	Long Leg Vertical	⌀	Round
LS	Lag Screw	(symbol)	Cont Wood in Section
LW	Light Weight	(symbol)	Wood Blocking in Section
MB	Machine Bolt	(symbol)	End of Wood Piece
mfr	Manufacturer	(a)	"member" above
		(b)	"member" below

DESIGN CRITERIA

1. Codes and Standards
   1997 Uniform Building Code (UBC)
   1989 ACI
   1989 AISC
2. Vertical loads
   Roof Live Load = 16.0 psf
   Live loads are reduced where permitted by code.
3. Lateral loads
   Seismic:
   Zone 3 ; Z = 0.3
   R = 4.5 ; I = 1.0
   Soil Profile Type: S_D
   Near Source Factors: (for Z = 0.4 only)
   Na = 1.0 ; Nv = 1.0

   Wind:
   70 mph – Exposure C
   Iw = 1.0
4. Soils Values
   Allowable soils pressure
   1) DL – psf
   2) DL + LL 2500 psf
   3) DL + LL + Seismic 3333 psf

   Footing
   Minimum depth = 12"
   Minimum width = 12"

TESTS AND INSPECTIONS

1. Tests and Inspections shall be provided by a qualified testing agency as required below and shall conform to the requirements of the 1997 UBC Section 1701. Testing and inspection records shall be kept for all structural concrete

Tests:

- ☐ Fill Compaction
- ■ Reinforcing Steel **
- ■ Concrete
- ■ Structural Steel **
- ■ Masonry
- ■ Grout and Mortar
- ☐ Epoxy & Expansion Anchors
- ☐ Shotcrete

** Submit mill certificates to verify material properties

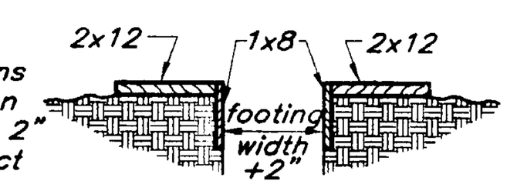
Inspections:

- ■ Footing Excavation
- ☐ Pile/Pier Installation
- ■ Reinforcement Placement
- ■ Concrete Placement
- ■ Shop Welding *
- ■ Field Welding
- ■ High Strength Bolting
- ■ Masonry Placement & Grouting (during prism preparation and prior to closing cleanouts)
- ☐ Shear Stud Installation
- ☐ Epoxy & Expansion Anchors
- ☐ Shotcrete

* Welding must be performed in a shop approved by the building official and structural engineer

FOUNDATIONS

1. All foundation work shall be done in accordance with the requirements of the Soils Report #3347-3-99 by Joseph M. Provenzano, P.E.
2. Foundations shall bear on lean mix concrete. See notes and details on sheet S3.1.
3. All filling, backfilling and compaction shall be done under the observation of the Soils Engineer and must be compacted to a minimum density of 90% in accordance with the procedure outlined in the soils report.
4. Building pad construction shall conform to the requirements of the soils report. The extent and depth of overexcavation and placement of engineered fill shall at a minimum be as shown on the plans. Final depth and extent of excavation and fill shall be determined at time of construction by a representative of the Soils Engineer. Foundation depths indicated on plans are for estimating purposes only.
5. Bottoms of all foundations shall be level. Changes in bottom of foundation elevation shall be made according to Stepped Footing Detail on the Typical Detail Sheet.
6. All pile caps, grade beams, tie beams & other footings shall be formed unless specifically approved by the Structural Engineer. Foundations may be cast in neat excavations provided written approval is obtained and footings are increased 2" in width. Use 2 x 12 plank at edge to protect against sloughing, as required.



7. Notify the Structural Engineer 48 hours before casting foundations.
8. The Soils Engineer shall advise the Building Official in writing that:
   a. The building pad was prepared in accordance with the soils report.
   b. The utility trenches have been properly backfilled and compacted and;
   c. The foundation excavations, forming and reinforcement comply with the report and approved plan.

CONCRETE

1. Structural concrete shall attain 28 day compressive strength as required in note #26. Maximum slump shall not exceed 4 inches.
2. Concrete mix design shall be prepared by an independent laboratory and reviewed by the Structural Engineer.
3. Cement shall conform to ASTM C-150 type I or II.
4. Concrete aggregates shall conform to ASTM C-33 for normal weight and ASTM C-330 for light weight.
5. Non-shrink grout or drypack shall consist of a premixed nonmetallic formula.
6. Reinforcing steel shall conform to ASTM A-615 Grade 60 for #4 and larger, and ASTM A-615 Grade 40 for #3 and smaller, except reinforcing steel to be welded shall conform to ASTM A-706.
7. All preheating and welding of reinforcing bars shall be done in accordance with AWS D1.4 latest edition and shall be continuously inspected by a qualified laboratory. Contractor shall furnish to the laboratory, rebar mill certificates.
8. Reinforcing steel shall be fabricated according to "Manual of Standard Practice for Reinforced Concrete Construction".
9. Wire fabric shall conform to ASTM A-185.
10. Dimensions shown for location of reinforcing are to the face of main bars and denote clear coverage. Concrete coverage shall be as follows:
    - Concrete deposited directly against ground (except slabs)---3"
    - Concrete exposed to ground but placed in forms---2"
    - Tied Columns (main bars)---2"
    - Beams (top bars)---1-1/2"
    - Beams (all other main reinforcing)---2"
    - Walls (exterior face)---1-1/2"
    - Walls (interior face)---3/4"
    - Slabs (on forms)---3/4"
    - Slabs (on ground)---2" clear from top uno
11. Splices in continuous reinforcement shall be lapped uno. In no case shall splices be less than 48 bar diameters. Splices in adjacent bars shall be not less than 5'-0" apart. Splice continuous bars in soil-bearing grade beams as follows: top bars at centerline of support; bottom bars at mid-span. Splice continuous bars in spandrel beams, wall beams, etc. as follows: top bars at mid-span; bottom bars at centerline of support. All bars size #14 and larger shall be continuous for the full length shown. Splices in WWF shall be 1-1/2 meshes wide.
12. All hooks shall be standard hooks unless otherwise shown or noted.
13. Construction joints shall be made rough and all laitance removed from the surface. Concrete may be roughened by chipping the entire surface, sand blasting, or raking the surface to provide 1/4" deep deformations.
14. Remove all debris from forms before casting any concrete.
15. Reinforcing, dowels, bolts, anchors, sleeves, etc., to be embedded in concrete shall be securely positioned before placing concrete.
16. Walls shall be cast in horizontal layers of 2'-0" maximum depth.
17. Concrete in walls, piers or columns shall set at least 2 hours before placing concrete in beams, spandrels, or slabs supported thereon.
18. Horizontal wall bars in double layer walls shall be staggered.
19. Dowel all vertical reinforcing in walls and columns from foundation with same size bar.
20. Consolidate concrete placed in forms by mechanical vibrating equipment supplemented by hand-spading, rodding or tamping. Use equipment and procedures for consolidation of concrete in accordance with the recommended practices of ACI 309 to suit the type of concrete and project conditions. Concrete shall not be dropped through reinforcing steel (as in walls) so as to cause segregation of aggregates. In such cases hoppers and chutes or trunks of variable lengths shall be used so that the free unconfined fall of concrete shall not exceed 6 feet.
21. Drill through steel columns, beams and plates to pass continuous reinforcing.
22. No wood spreaders allowed. No wood stakes allowed in areas to be concreted.
23. Additional reinforcing in precast or tilt-up panels required for lifting stresses shall be supplied by Contractor.
24. Provide 2 – #5 x 4'-0" diagonal reinforcing at mid-depth of slab at all re-entrant corners typical.
25. All saw cutting shall be done after initial set has occurred to avoid tearing or damage by the saw blade, but before initial shrinkage has occurred.
26. CONCRETE STRENGTHS:

Item	f'c at 28 days	Max Aggregate Size	Weight	Max w/c Ratio
Footings	3000	1 1/2"	150	0.50
Slab	3000	1"	150	0.50

STRUCTURAL STEEL

1. Fabrication, erection and materials shall conform with the AISC Specification for the Design, Fabrication and Erection of Structural Steel for Buildings and the Uniform Building Code, latest editions.
2. Structural Steel rolled shapes and plates shall conform with ASTM A-36 or A-572, grade 50 as noted.
3. Steel Pipe shall conform to ASTM A-53, Types E or S, Grade B.
4. Structural Tubing shall conform to ASTM A-500, Grade B.
5. All structural steel shall receive minimum of one shop coat of red primer paint. Do not paint areas to be field welded, to receive friction type high strength bolts, or to be embedded in concrete. Provide additional painting as noted in the specifications.
6. All structural steel shall be erected plumb and true to line. Temporary bracing shall be installed and shall be left in place until other means are provided to adequately brace the structure.
7. Place non-shrink grout under all base plates before adding vertical load.
8. Wrap structural steel embedded in concrete with 6"x6"/W1.4 x W1.4 WWF. Structural steel below grade shall have 3 inches minimum of concrete cover.
9. Bolted connections shall consist of unfinished bolts conforming to ASTM A-307 unless noted otherwise. Where high strength bolts are indicated, bolts conforming to ASTM A-325 or ASTM A-490 shall be provided.
10. "Slip-critical" bolted connections:
    a) "Slip-critical" connections (A325SC design values with special inspection) are required at all braced frame connections, at all connections along chord lines and drag lines (as noted on plans), and at all bolts in oversized or slotted holes.
    b) The special inspector must be present during installation and tightening operation of "slip-critical" connections.
11. Provide 1/2" diameter stitch bolts and ring fills, spaced at not more than 2'-0" on center for all double angle members.
12. At wood to steel parallel contact, bolt with 1/2" diameter bolts at maximum 24"cc.
13. Holes for unfinished bolts shall be of the same nominal diameter of the bolt plus 1/16". Use standard AISC gage and pitch for bolts except as noted otherwise.
14. Holes for anchor bolts embedded in concrete shall be of the same nominal bolt diameter plus 3/16" unless noted otherwise.
15. Welding shall be done by the electric arc process in accordance with American Welding Society Standards, using only certified welders. All groove welds shall have complete penetration unless noted otherwise. All exposed welds shall be ground smooth.
16. Weld lengths called for on plans are the net effective lengths required.
17. Minimum fillet welds: 3/16" @ t < 1/2"
    1/4" @ t < 3/4"
    5/16" @ t > 3/4"
18. Welding Procedure Specifications (WPS) for shop and field prequalified weld joints and weld joints qualified by test shall be prepared for review prior to fabrication. All welding procedure items such as base metals, welding processes, filler metals and joint details that meet the requirements of AWS D1.1 Section 5.1 shall be considered as prequalified. Any change or substitution that is beyond the range or tolerance or requirements for prequalification shall be qualified by test per AWS D1.1 Section 5 part B. Welds at base metals over 2 inches in thickness are not allowed as prequalified joint welds.
19. For nondestructive testing of welded connections excluding primary members of moment resisting frames:
    a) Welded connections shall be tested by nondestructive methods for compliance with AISC chapter J2 and job specifications. Ultrasonic Testing shall be in accordance with AWS D1.1 ASTM E164 and ASME Section V. Radiography shall be in accordance with AWS D1.1, ASTM E94 and E99, and ASME Section V. This testing shall be part of the special inspection requirements of UBC Section 1701 performed by an approved independent testing laboratory as follows:
       1. Base metal thicker than 1 inch when subject to through thickness weld shrinkage strains.
       2. All complete penetration groove or butt welds.
       3. All partial penetration groove welds when used in column splices.
    b) Any material discontinuities shall be accepted or rejected on the basis of defect rating in accordance with the (larger reflector) criteria of AISC chapter J2.

HOLLOW CONCRETE UNIT MASONRY (BLOCK)

1. Concrete block units shall conform to ASTM C-90 Type I units. Compressive strength of units to be 1000 psi for gross area and 2000 psi for net area. F'm = 1500 psi. F'm shall be verified in accordance with section 2105.3 of the 1994 UBC. Block units shall be fabricated with a "CalTrans Core" (1 1/2" face shells).
2. Mortar shall be proportioned to attain a 28 day compressive strength of 1800 psi. Use a minimum of 1 part Portland cement to 1/4 – 1/2 part hydrated lime with sand at 2-1/2 to 3 times combined volume of cement and lime. 2" cubes shall test 1800 psi in 28 days. When required, mortar strength shall be verified in accordance with section 2105.4 of the 1994 UBC.
3. Grout shall be proportioned to attain a 28 day compressive strength of 2000 psi. Use a minimum of 1 part Portland cement to 3 parts sand. Add 1 lb. of Sika Grout Aide Type II, or equal, per 100 lb. of cementitious material. 1 to 2 parts of pea gravel shall be used where the least clear cell dimension exceeds 2 inches. Not more than 5% of the pea gravel shall pass the No. 8 sieve and 100% shall pass the 3/8" sieve. When required, grout strength shall be verified in accordance with section 2105.5 of the 1997 UBC.
4. Reinforcing steel shall conform to ASTM A-615 Grade 60 for #4 and larger, Grade 40 for #3 and smaller.
5. Minimum rebar clearance to face shell is one bar diameter or 1/2", whichever is greater.
6. Before block is placed on concrete, thoroughly clean concrete of all laitance and all loose material. Roughen as in a concrete construction joint.
7. Concrete block masonry shall be built to preserve the unobstructed vertical continuity of the cells. All head and end joints shall be solidly filled with mortar for a distance in from the face of the wall or unit not less than the thickness of the longitudinal face shells. Bond shall be provided by lapping successive courses or by equivalent mechanical anchorage.
8. Vertical cells shall have vertical alignment sufficient to maintain a clear unobstructed continuous vertical cell.
9. Low-lift grouted construction shall conform to 1997 UBC Section 2104.6.1.1.2. High-lift grouted construction shall conform to 1997 UBC Section 2104.6.1.1.3.
10. Clean out openings shall be provided at the bottoms of all cells to be filled at each lift or pour of grout where such lift or pour of grout is in excess of 4'-0" in height. Any overhanging mortar or other obstruction or debris shall be removed from inside of such cells. The clean outs shall be sealed after inspection and before grouting. Mechanically vibrate all grout pours.
11. Vertical reinforcing shall be held in position at top and bottom and at intervals not to exceed 192 bar diameters.
12. Thoroughly clean all cells and bond beams of mortar before grouting.
13. All cells shall be filled solidly with grout. All grouting shall be done under the continuous observation of a qualified inspector where indicated on plans.
14. When grouting is stopped for one hour or longer, horizontal construction joints shall be formed by stopping the pour of grout 1-1/2" below the top of the uppermost unit.
15. Every vertical bar in walls shall lap 48 diameters with a dowel of the same size extending from the foundation. Locate vertical reinforcing at centerline of wall unless shown or noted otherwise. Carry each dowel to within 3" of the bottom of the foundation and terminate with 90 degree hook. Dowels shall be straight and plumb.
16. Place all horizontal bars in bond beam units. When 2 bars are used, stagger laps minimum of 5'-0".
17. Provide 2 – #5 bars with matching footing dowels (full height of wall at jambs and extending a minimum of 2'-0" past edges of openings at head and sill) each side of all openings and each end of all walls, unless noted otherwise on drawings.
18. All embedded items (bolts, straps, etc.) shall be secured in place prior to grouting. Cut a hole in the face shell to attain a minimum of 1" grout all around embedded items.
19. All bolts in masonry shall be ASTM A307 headed bolts.
20. Use open end block for all stack bond construction.
21. All rebar shall be lap spliced as follows (u n o):

Bar Type	Lap Length	Notes
Vertical bars	48d	Splices for multiple bars in the same cell must be stgrd 24" or lapped 62d
Horizontal bars	48d	
Jamb bars	72d	
Chord bars	72d	Splices for multiple bars in the same cell must be stgrd 24" or lapped 94d
Vertical bars @ ends & corners	72d	
	72d	

WINDOW SYSTEM DESIGN CRITERIA

1997 UBC Wind Speed– 75 mph exposure C.

1. All mullions and their connections shall be designed to span between structural supports as shown on drawings. Verify ceiling heights with Architectural drawings.
2. All mullions and their connections shall allow for a relative movement between stories of not less than 1" due to seismic loads.
3. Submit complete shop drawings and calculations signed by a Civil Engineer registered in the state in which the project is located, prior to fabrication.

METAL DECK NOTES

1. Provide metal decking of type and gauge as shown on plans.
2. Metal floor deck shall be composite type, conforming to ASTM A653, structural quality, with minimum yield strength of 38 ksi and shall be zinc coated per ASTM A625, G-60 grade coating.
3. Metal roof deck shall conform to ASTM A653, structural quality, with minimum yield strength of 38 ksi and shall be galvanized per ASTM A625, Grade 60 coating.
4. Prior to fabrication, the Contractor shall submit shop drawings for the metal decking, showing deck gauge, size and layout as well as closure conditions, welds to supports and side lap details.
5. Connection and welding of decking to structural supports and deck side seams shall be as specified in the structural drawings.
6. The General Contractor shall coordinate the load requirements from all subcontractors so that no combination of loads exceeds the limitations given in design criteria.
7. All reinforced openings in metal deck shall be installed by metal deck subcontractor.
8. At metal decks to receive concrete, absolutely no conduit or piping of any type is to be placed horizontally within the depth of the concrete above the metal deck.
9. At metal decks without concrete, hang no more than 50 lbs. at 1-1/2" deck (20 gauge min.) and 100 lbs. at 3" deck (20 gauge min.) per metal deck rib in any span; space hangers no closer than 2'-0"cc perpendicular to span.
10. Where suspension or hanger wires are required by others, verify and coordinate locations, patterns, spacings, etc. with the appropriate trade. Drill or punch holes at bottom of deck flutes of sufficient size to pass support wires. Wire supports shall be looped and secured with a minimum of three (3) tight turns around a minimum 1-1/2" x 8" long furring channel or No. 3 x 8" long reinforcing bar centered above the hole and laid in the deck flutes.

KEYNOTES

REGISTERED PROFESSIONAL ENGINEER
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Exp. 6/30/00
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NO.	DATE	REVISION COMMENTS
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PROJECT
BALFOUR ROAD AQUATIC CENTER

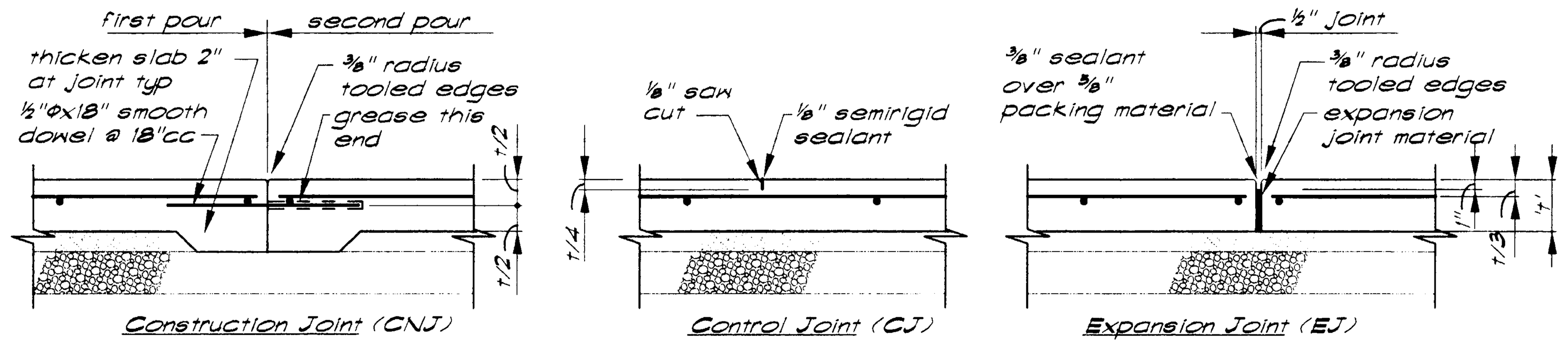
DRAWING TITLE
GENERAL NOTES

SEAL	DRAWN BY	PROJECT NO.
LICENSED ARCHITECT JORDAN S. KNIGHTON C-015848 REN. 2-28-99 STATE OF CALIFORNIA	.	98149
	CHECKED BY: BOR	CADD FILE NO.: A2-1
	SCALE: AS NOTED	DRAWING NO.
	DATE: © 02-02-99	S0.1
	PRINTED: 8-12-99	SHEET . OF .

PB 99-1109
Balfour Road Aquatic Center
Structural
General Notes

TYPICAL DETAILS

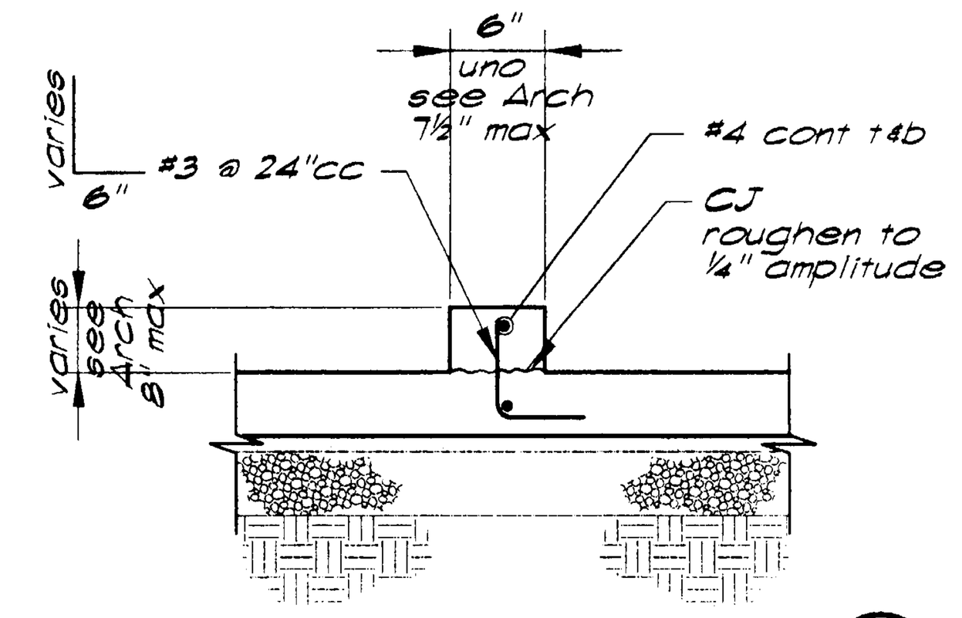
APPLICABLE TO ALL DRAWINGS UNLESS NOTED OR SHOWN OTHERWISE



Note:
Construction joints and control joints shall divide slab into areas not exceeding 225 sq ft without reentrant corners and with length to width ratios not exceeding 1½ to 1. Contractor shall submit layout plan showing proposed control and construction joint locations. Joint spacing shall not exceed 15 feet in either direction. Semirigid sealant to be Euclid Euco #700 or equal.

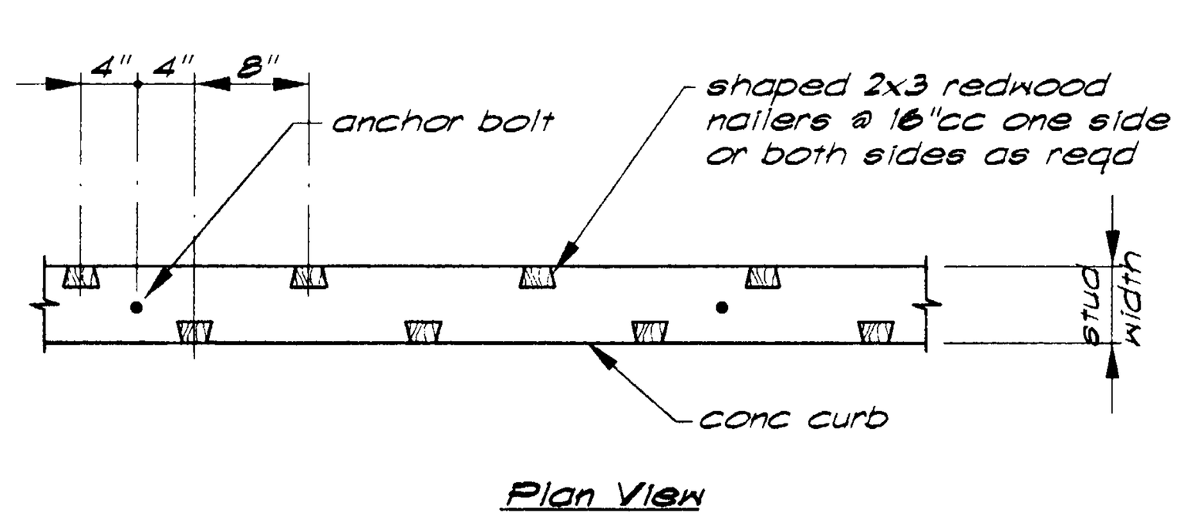
Slab-On-Grade Joints (1/S0.2)

330S001-12



Typical Curb (2/S0.2)

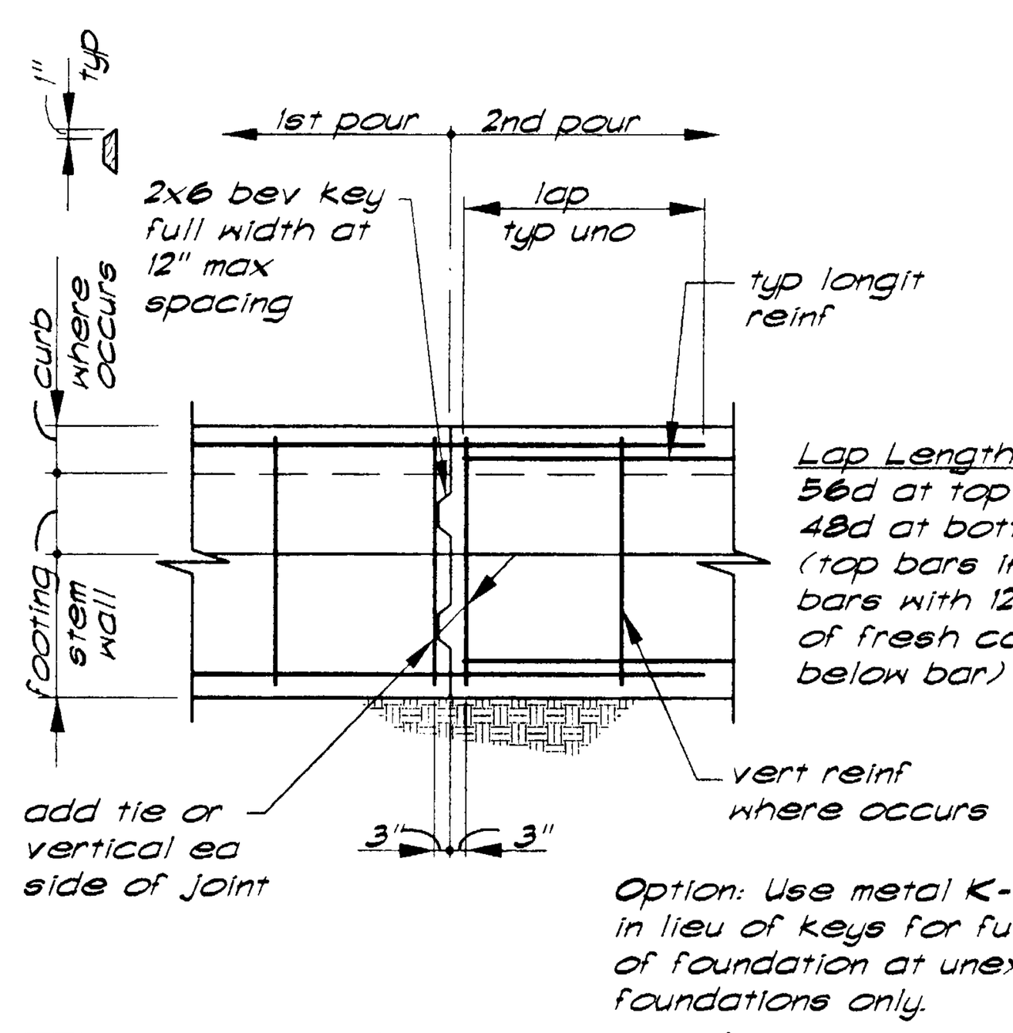
330S007-12



Plan View

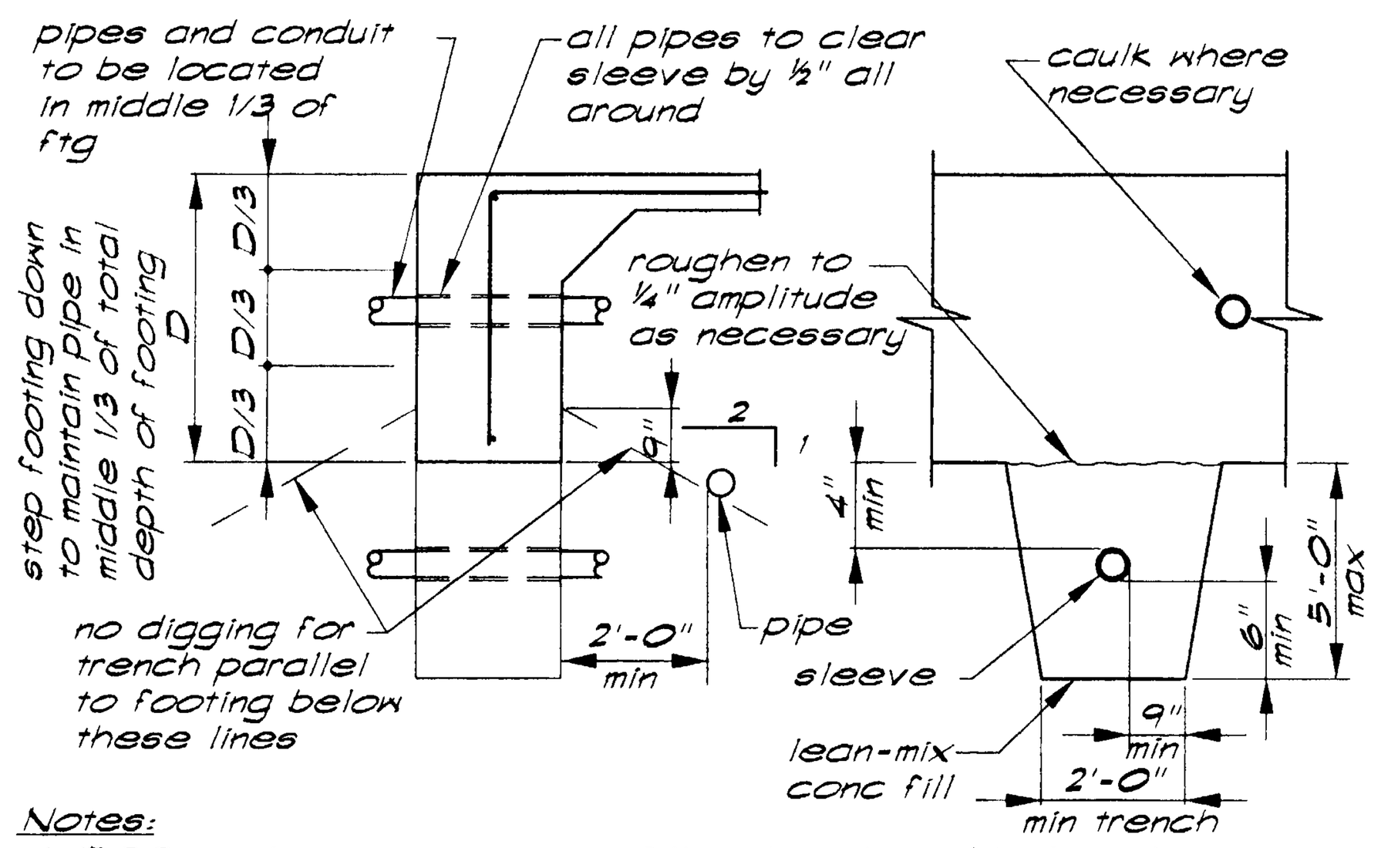
Nailers In Conc Curb (3/S0.2)

330S006-12



Typical Foundation Construction Joint (4/S0.2)

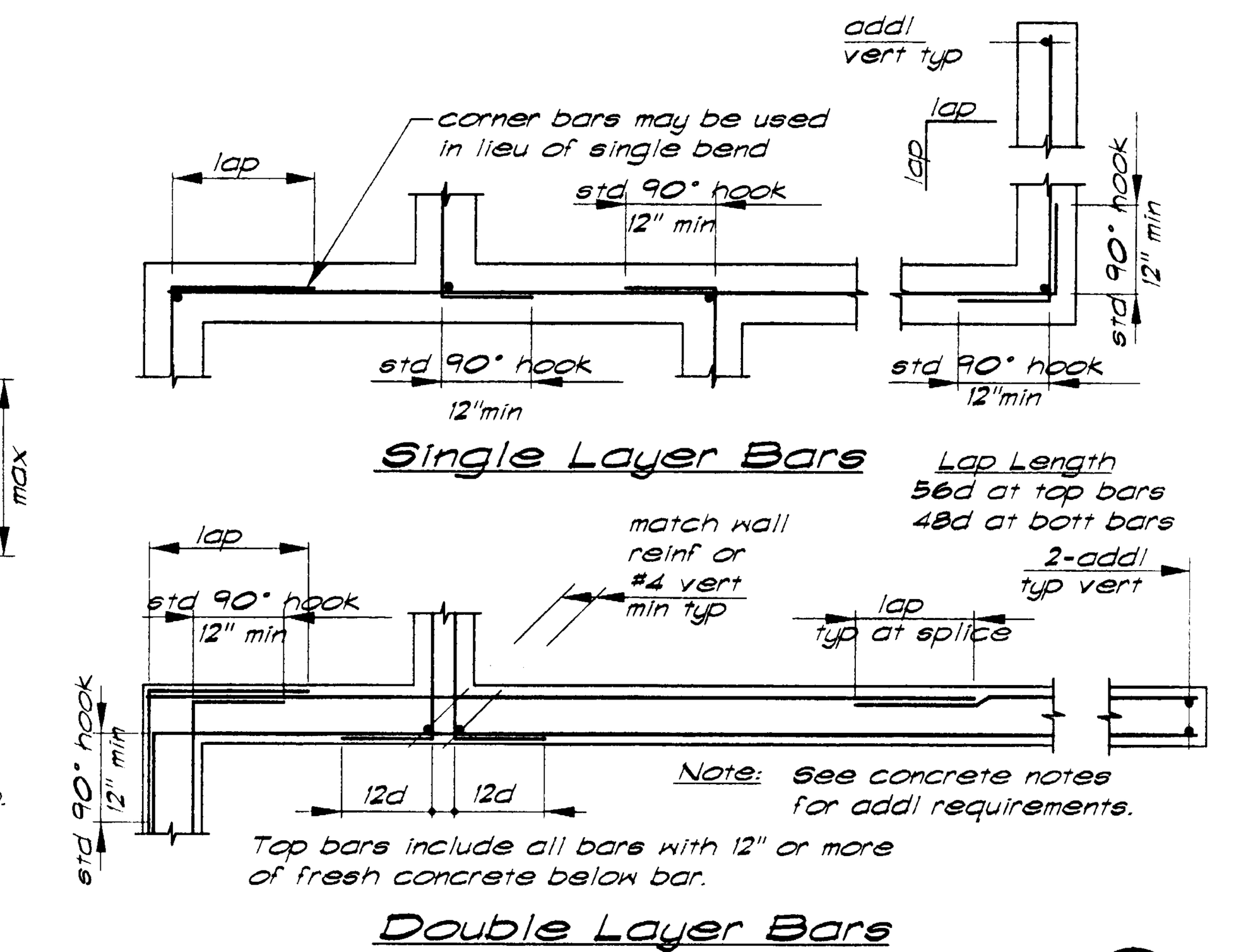
330S016-24



Notes:
1. 1500 psi lean mix concrete fill to be placed before ftg is cast. Make same width as ftg and full width of pipe trench.
2. Step ftg if pipe occurs in lower third of original footing depth.
3. No pipes shall be placed below spread ftgs or within 2 to 1 bearing zone around spread footing.
4. If pipe is in place prior to casting concrete, wrap pipe w/ 1" styro-foam insulation in lieu of sleeve.
5. Pipes or conduits are not allowed parallel in footing.

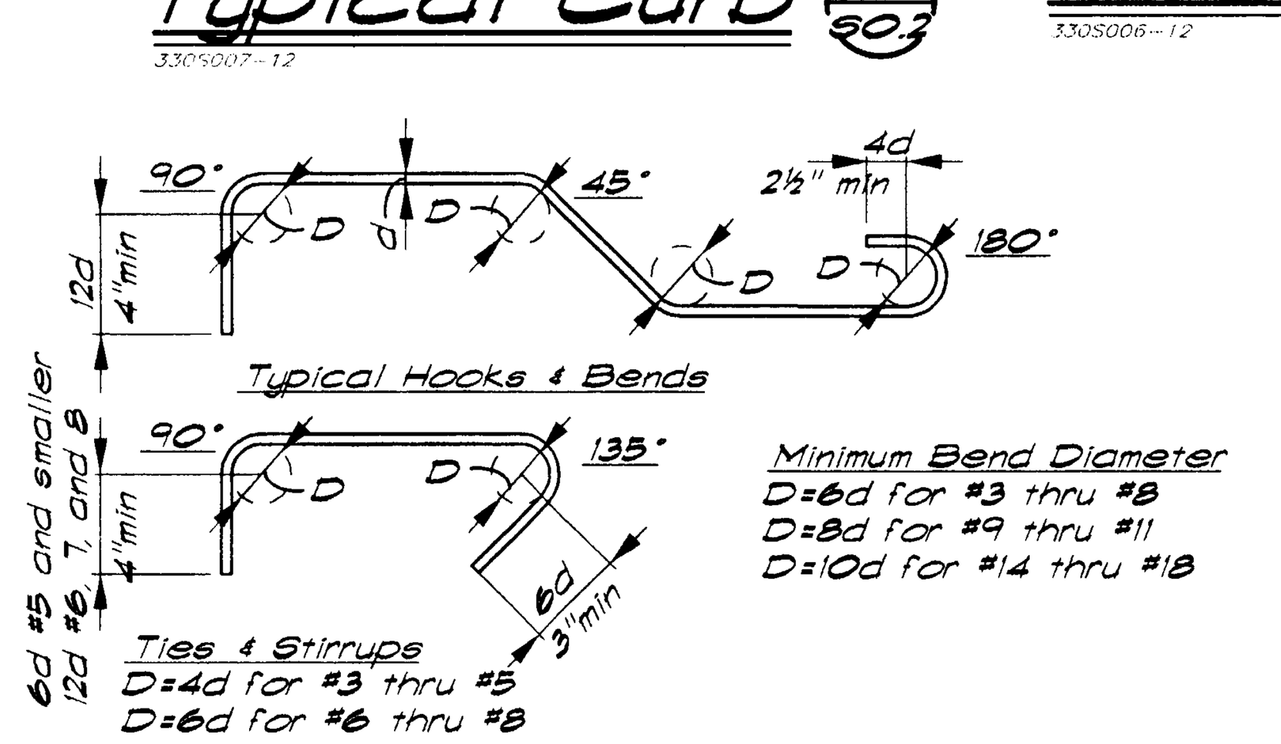
Concrete Footings at Pipes & Conduits (5/S0.2)

330S005-32



Corner Reinforcing at Concrete Walls & Ftgs (6/S0.2)

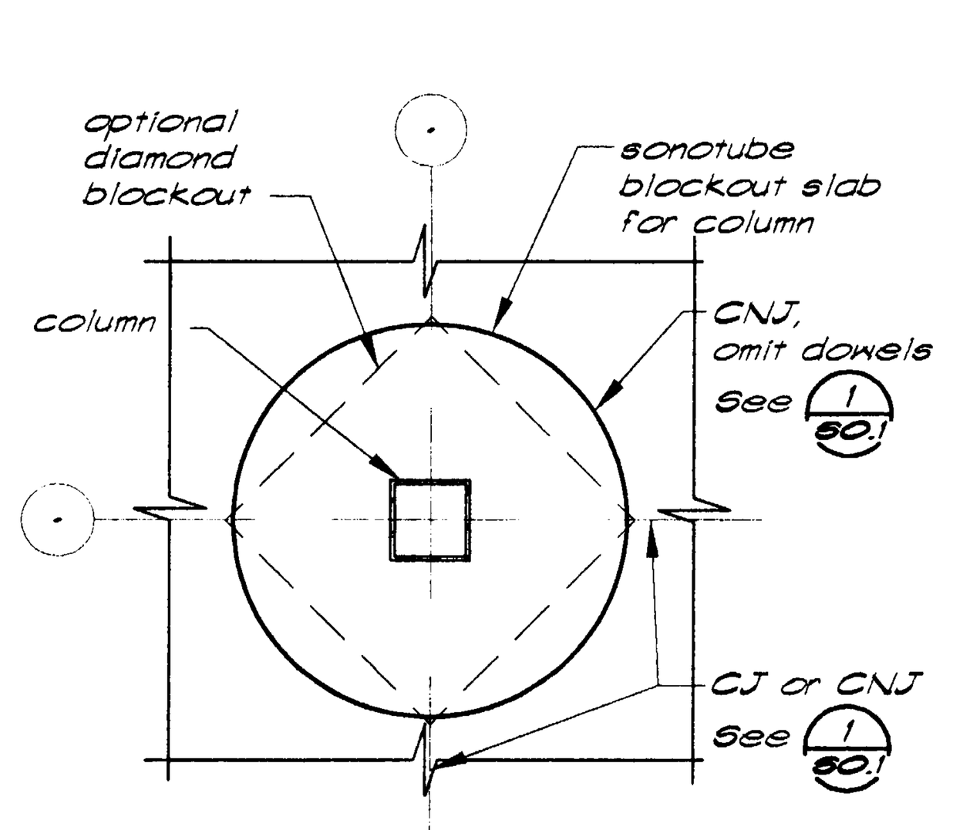
330S008-32



Note: All hooks shall be 90° standard hooks unless otherwise shown or noted.

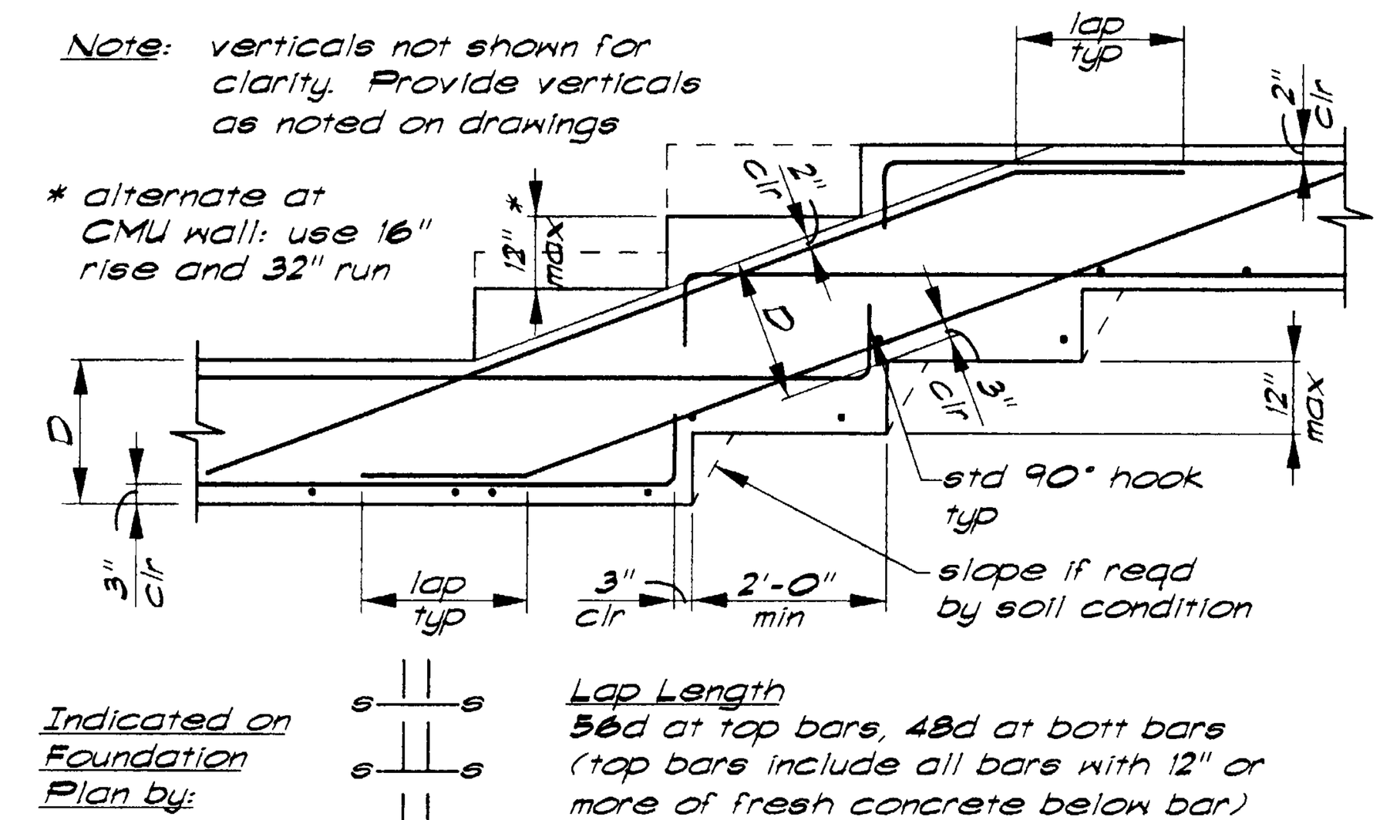
Standard Rebar Hooks and Bends (7/S0.2)

330S003-12



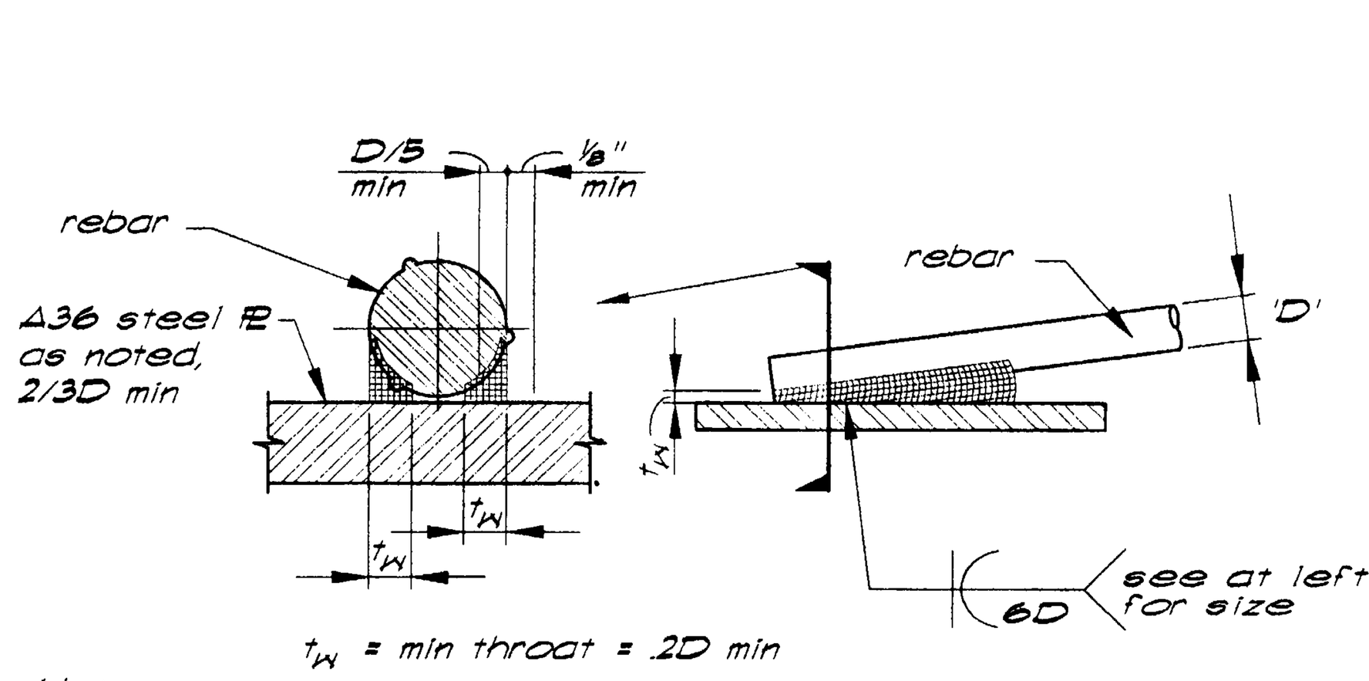
Slab Blockout (8/S0.2)

330S004-12



Typical Footing Step (9/S0.2)

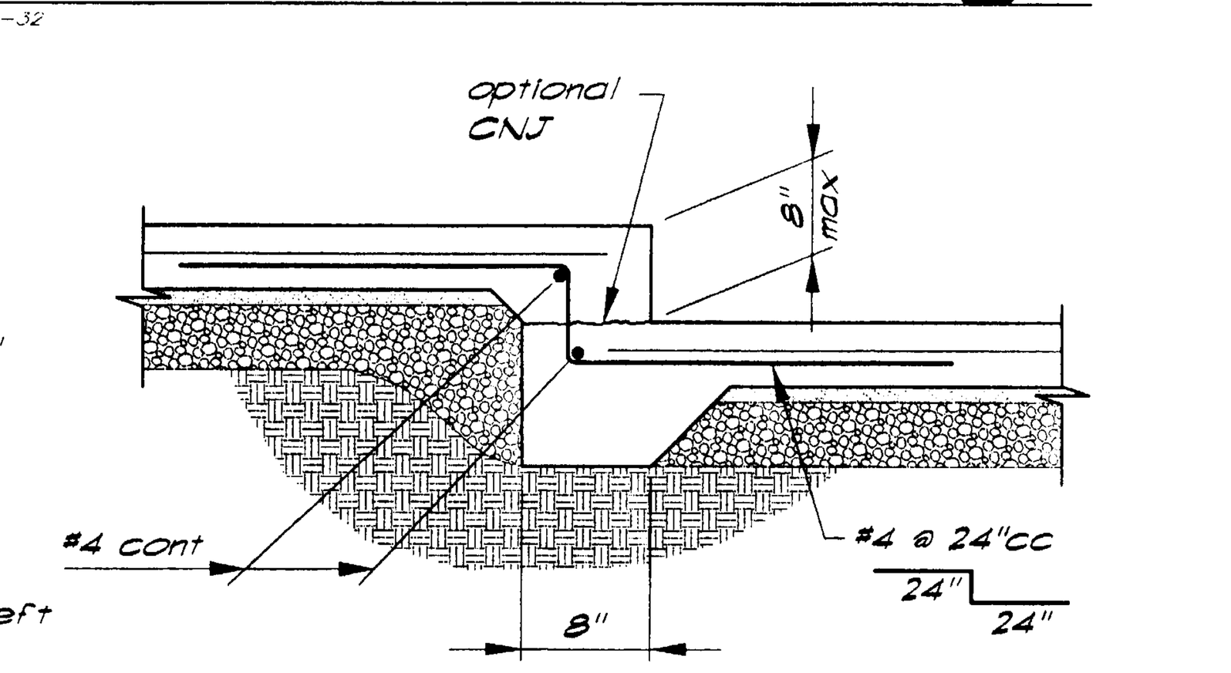
330S010-32



Notes:
1. Rebar shall be ASTM A706 or ASTM A615 with carbon equivalent no greater than .75% and conforming to UBC Standard 19-2.
2. All preheating and welding shall be done in accordance with AWS D1.4.
3. All welding shall be continuously inspected by a qualified laboratory.

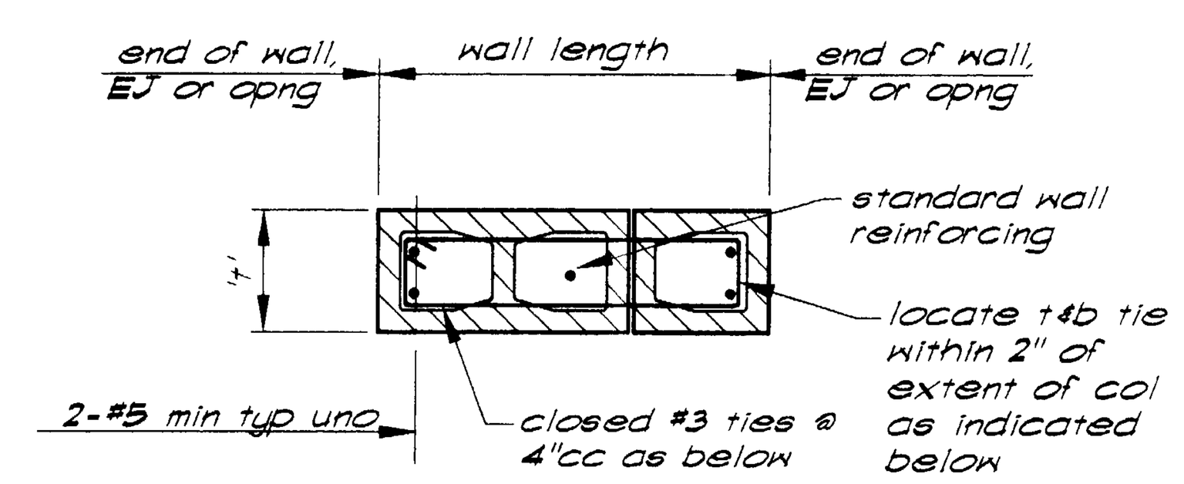
Rebar Welding Detail (10/S0.2)

330S002-32



Typical Step in Slab (11/S0.2)

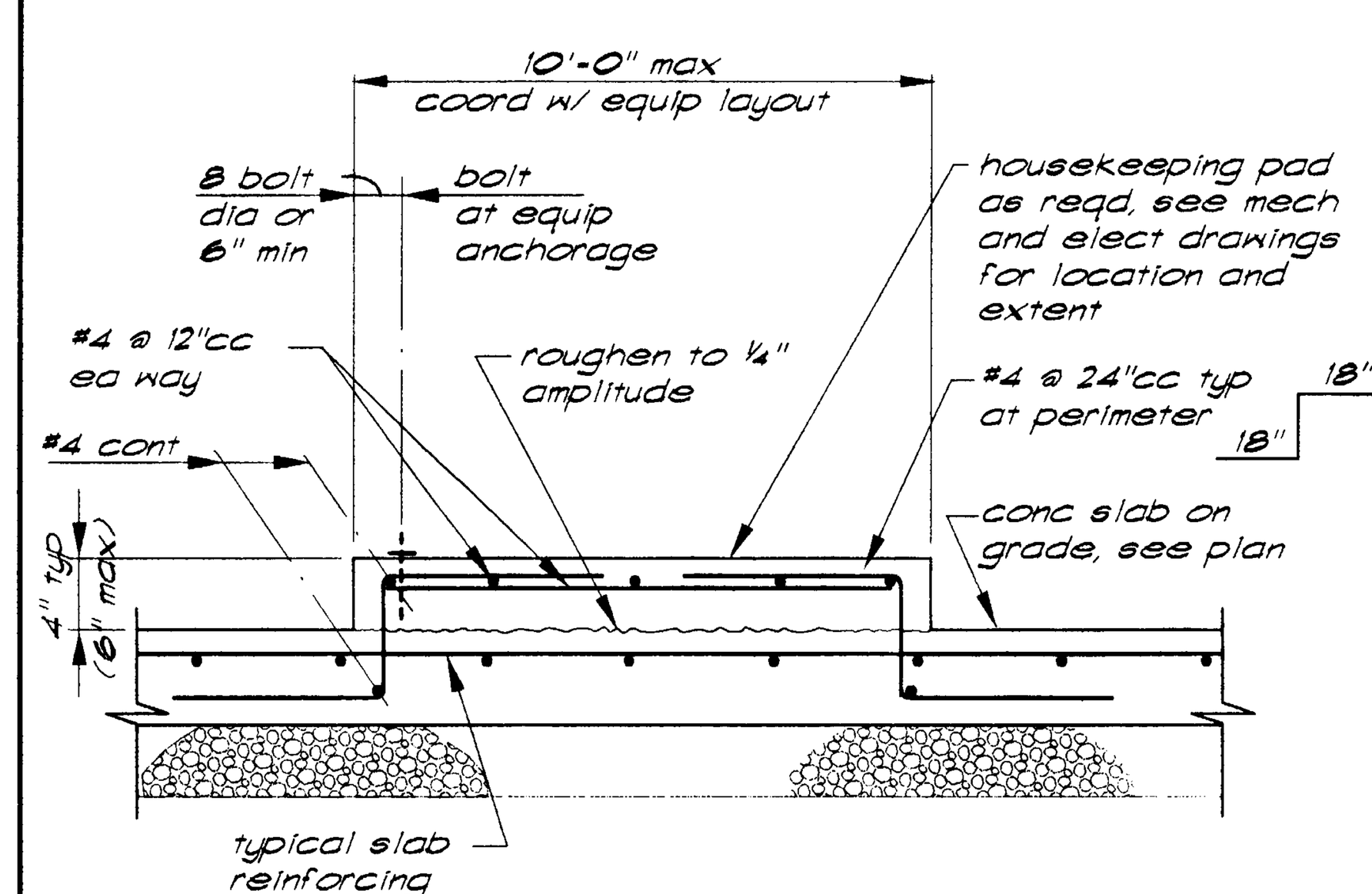
330S018-12



Notes:
1. Extent of ties shall be wherever the wall is terminated as shown above at both sides of the wall segment.
2. Blockouts in walls where cell is not fully grouted shall be considered as openings.
3. Column reinforcing ties are required at all wall sections whose length is 24" or less @ 8" walls, 30" or less @ 10" walls, and 36" or less @ 12" walls.

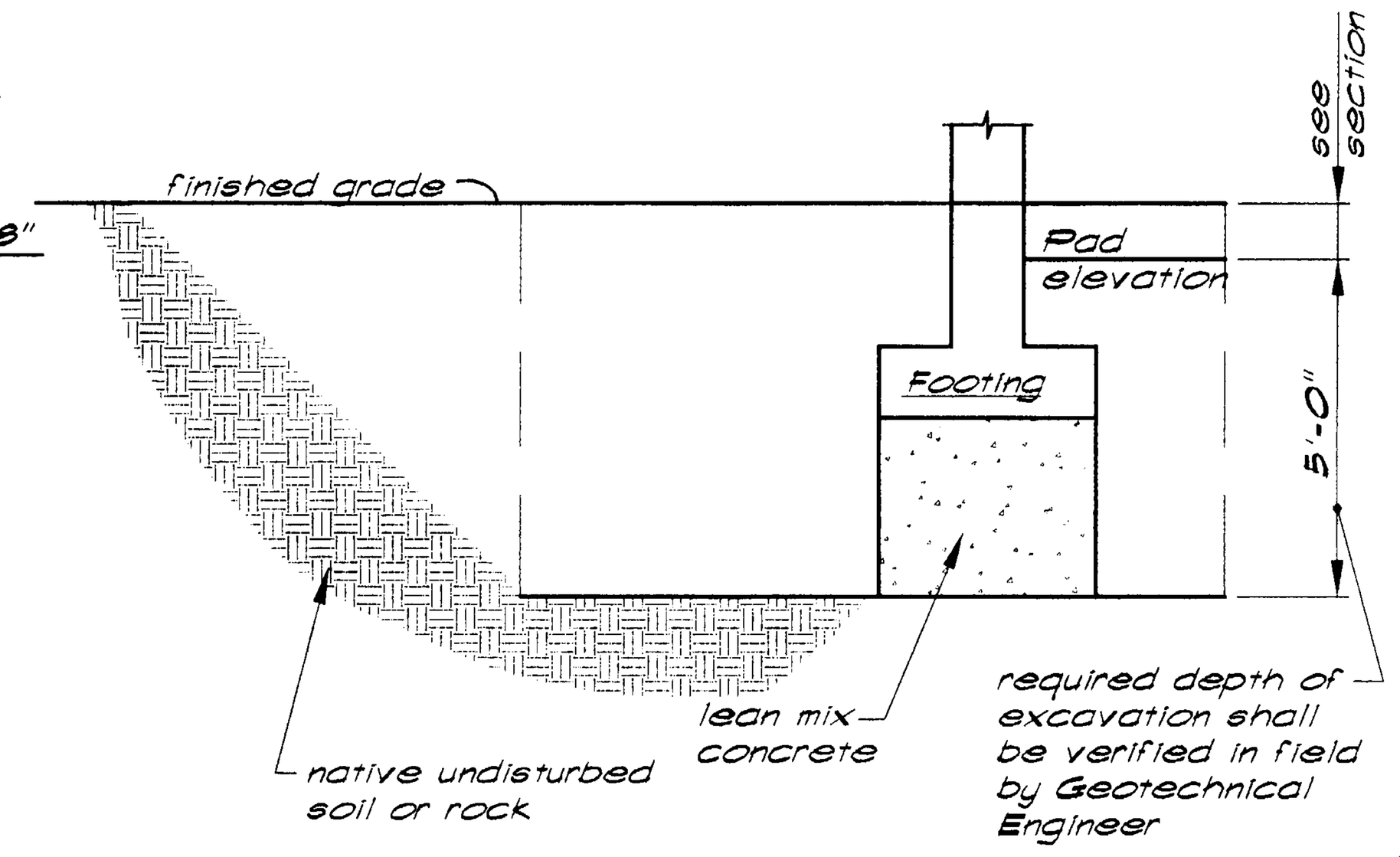
CMU Column Detail (21/S0.2)

420S006-12



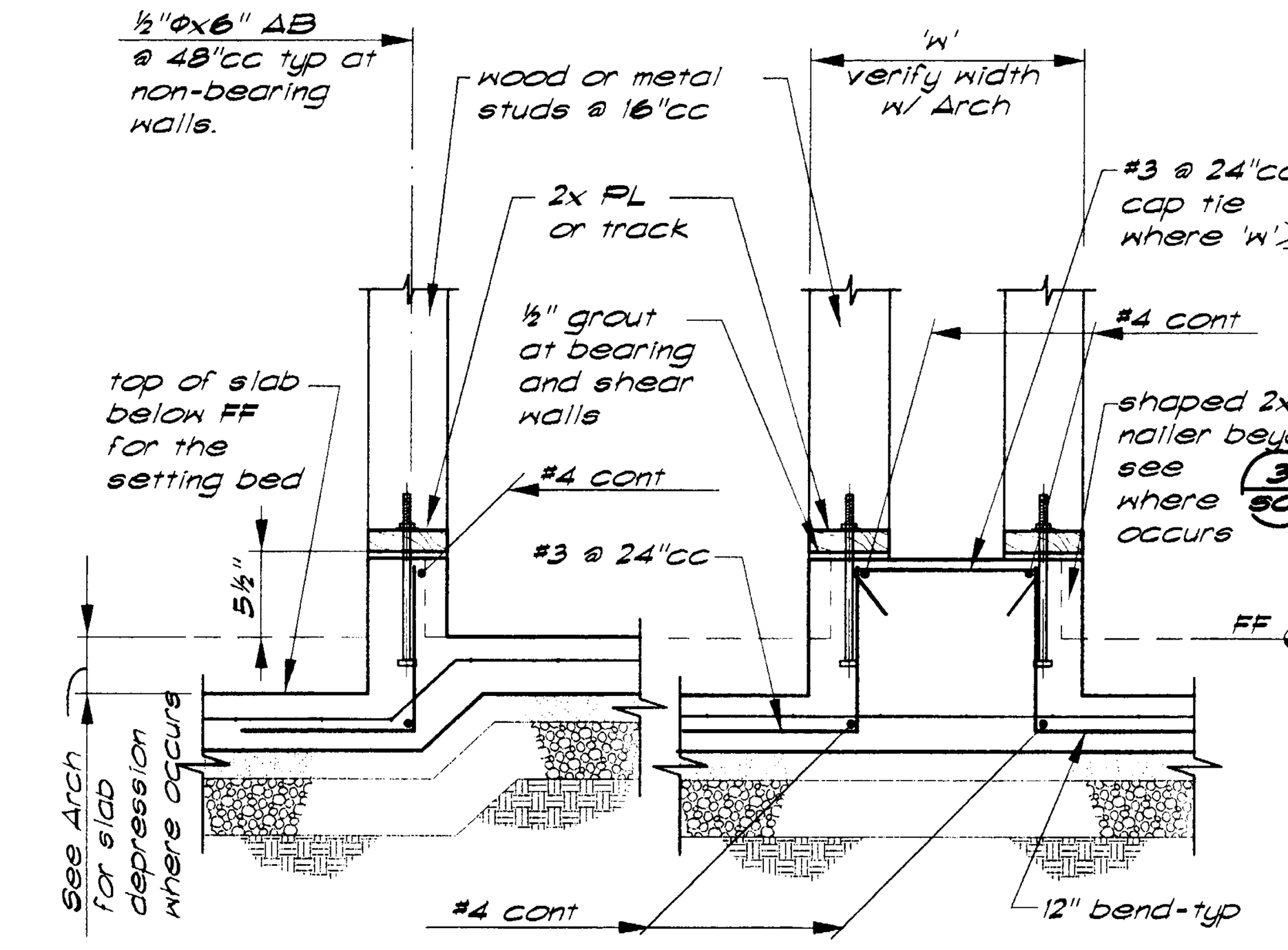
Typical Housekeeping Pad at Slab on Grade (12/S0.2)

330S017-16



Engineered Fill Section (13/S0.2)

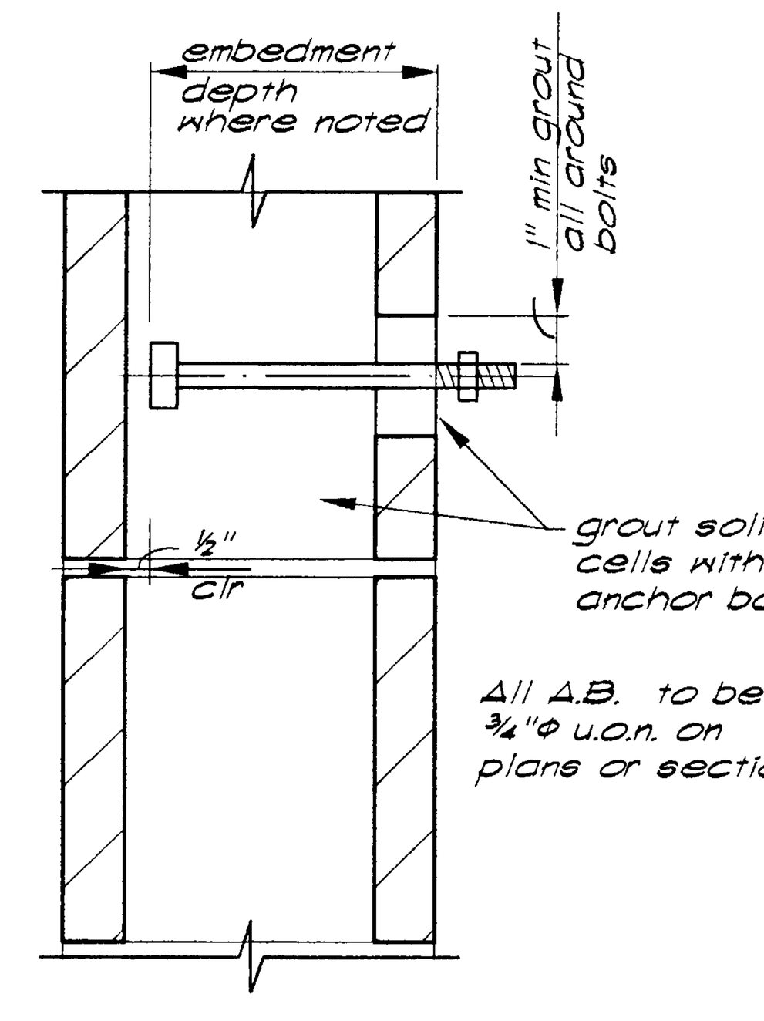
330S013-32



Typical Curb (14/S0.2)

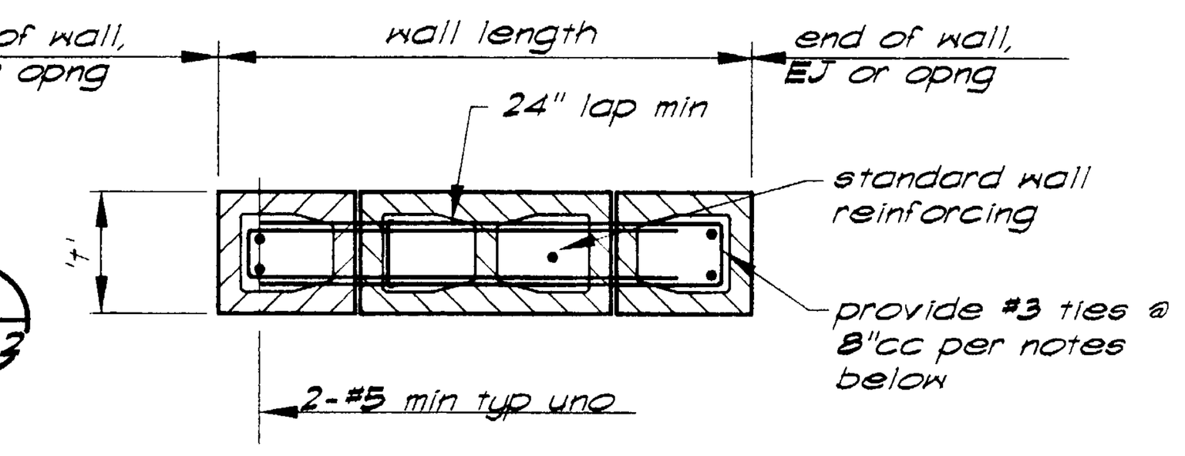
At slab depression and double wall

330S012-12



Typical Anchor Bolt in Conc Block (15/S0.2)

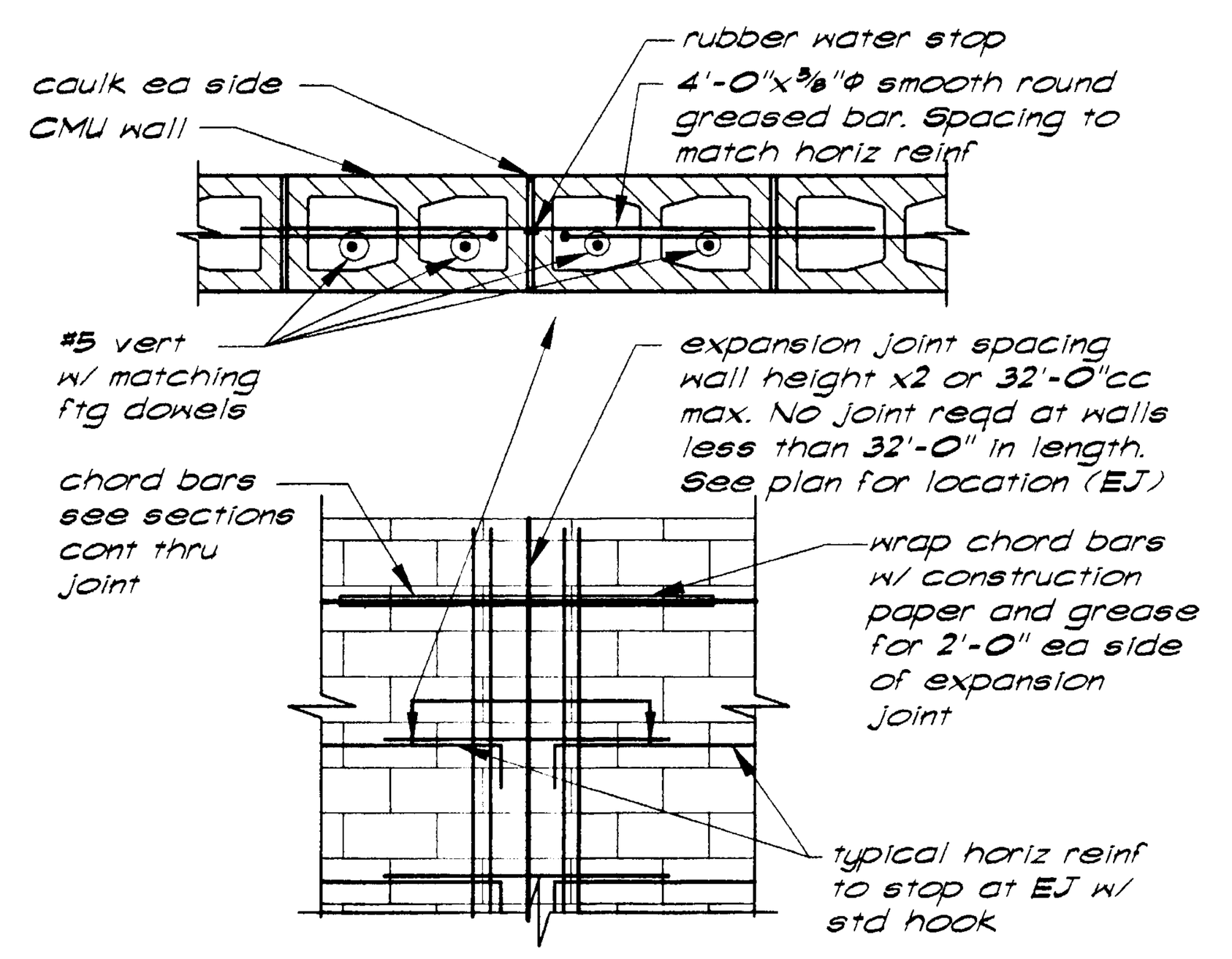
420S011-4



Notes:
1. Extent of ties shall be wherever the wall is terminated as shown above at both sides of the wall segment
2. Blockouts in walls where cell is not fully grouted shall be considered as openings.
3. Pier reinforcing ties are required at all wall sections whose length is from 3't' to 5't' or where height of wall segment being considered is greater than twice the wall length

CMU Pier Detail (20/S0.2)

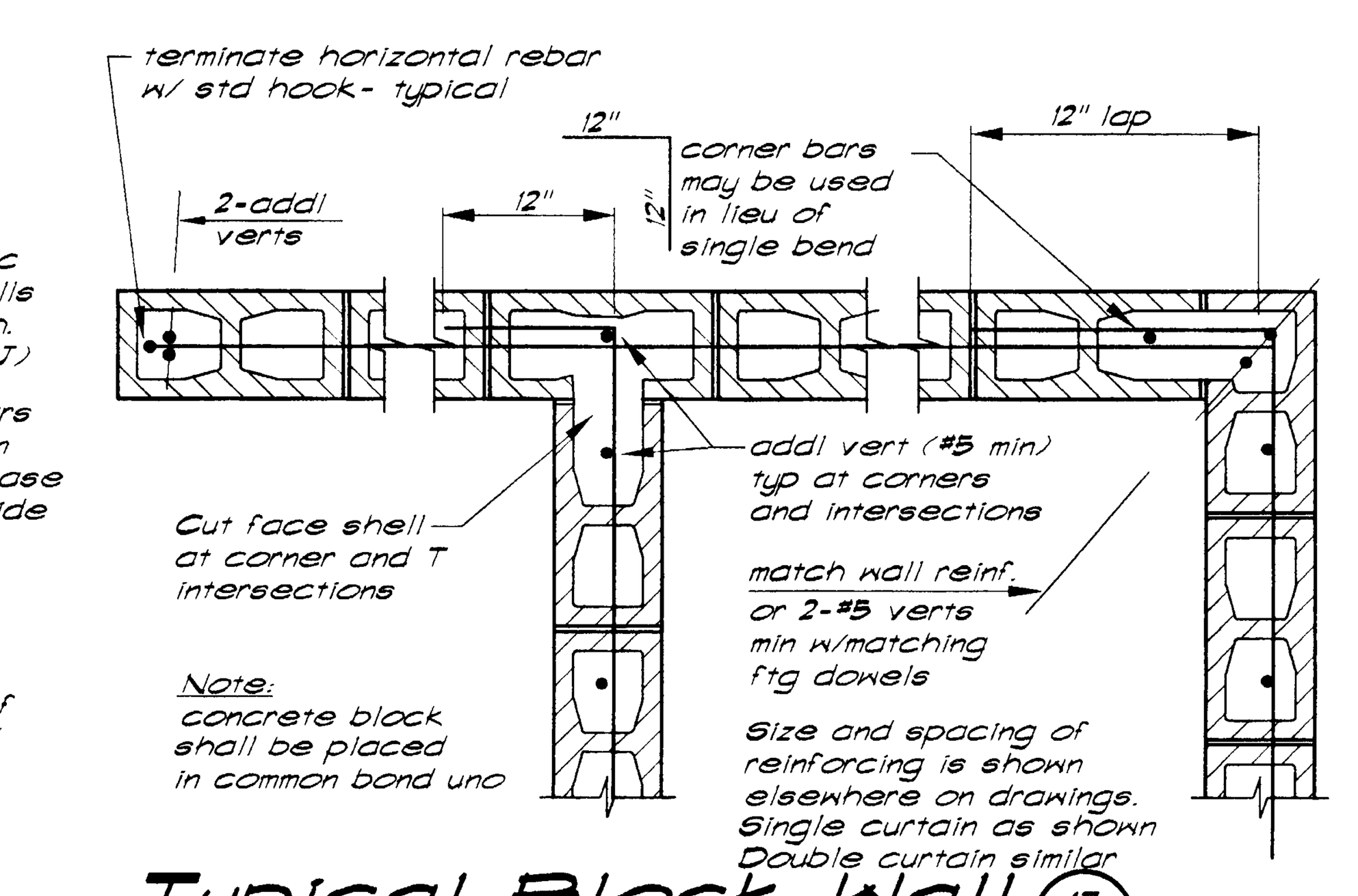
420S005-12



Note: 1) Do not splice chord bars within 4'-0" of expansion joint.
2) Place no joints within 2'-0" of any door or window openings.

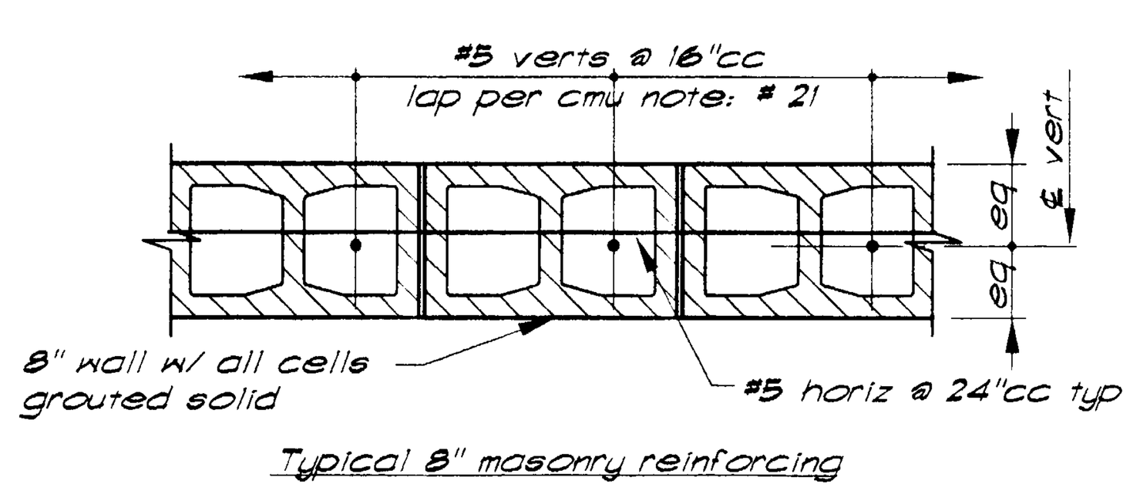
Typical Block Wall Expansion Joint (16/S0.2)

420S004-12



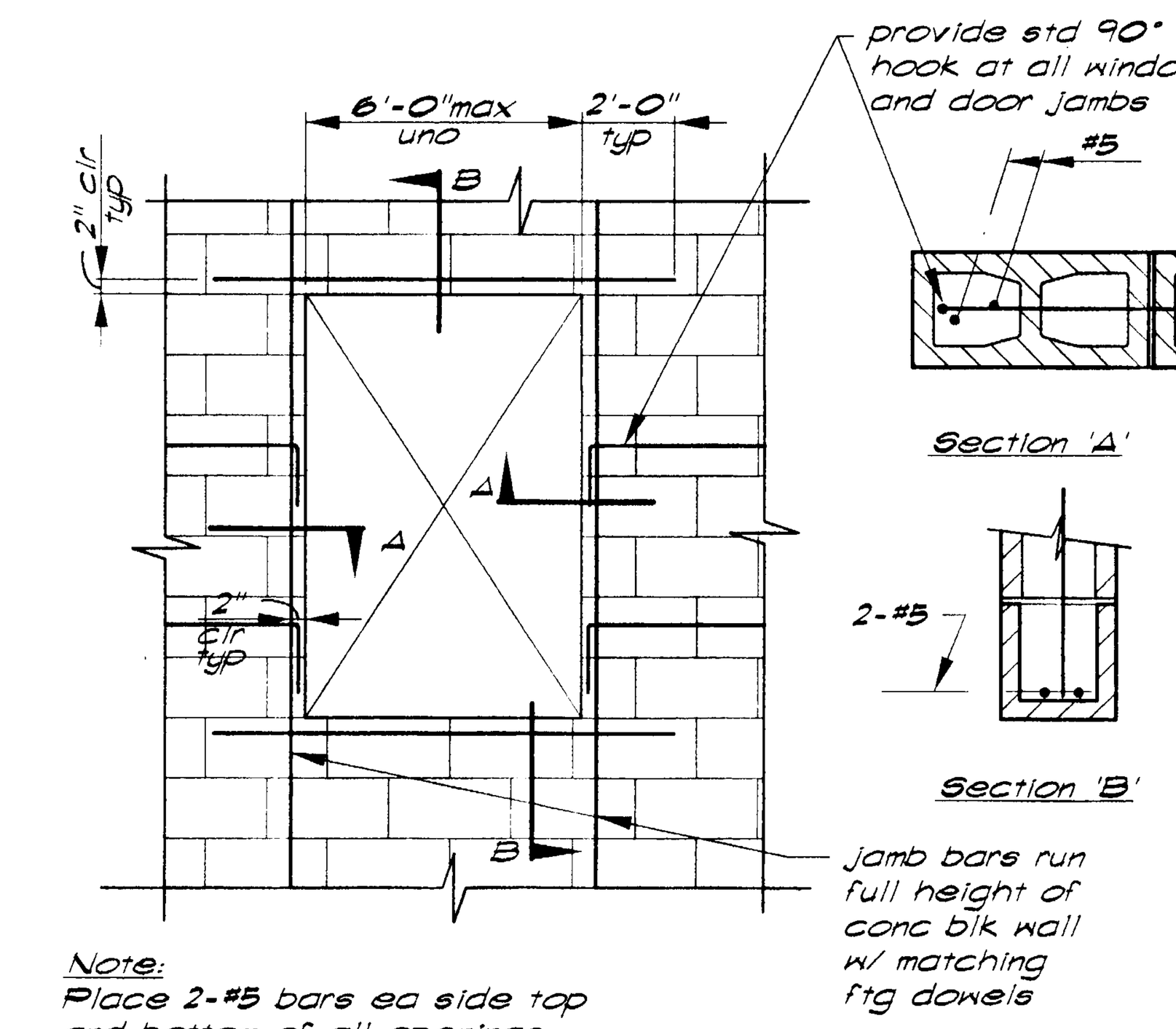
Typical Block Wall Reinforcing at Corners and Intersections (17/S0.2)

420S002-12



Typical Block Wall Reinforcing (18/S0.2)

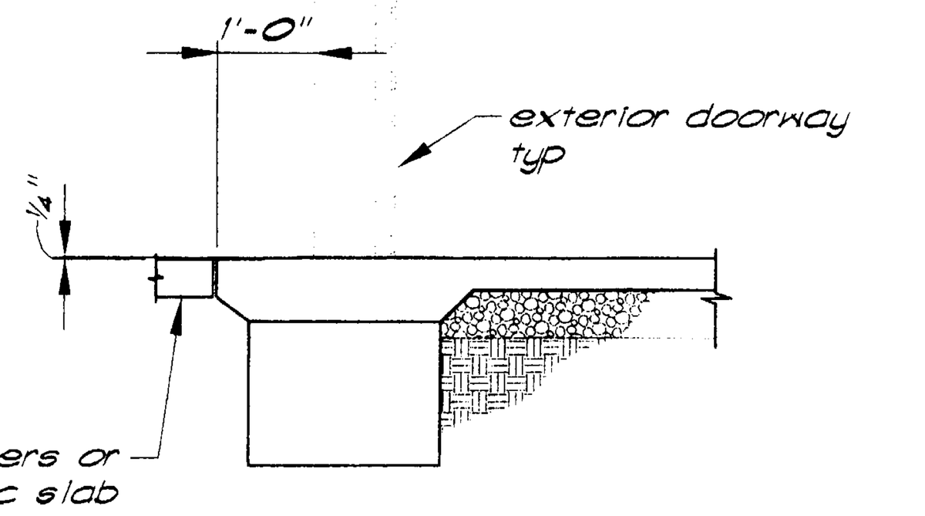
420S003-12



Note:
Place 2-#5 bars ea side top and bottom of all openings.
Top & bottom bars shall not be spliced.

Opening Reinforcing at CMU Wall Openings (19/S0.2)

420S001-12



Typical Sill @ Ext. Doors (21/S0.2)

PB 99-1109
Balfour Road Aquatic Center
Structural
Typical Details

KEYNOTES

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NO.	DATE	REVISION COMMENTS			
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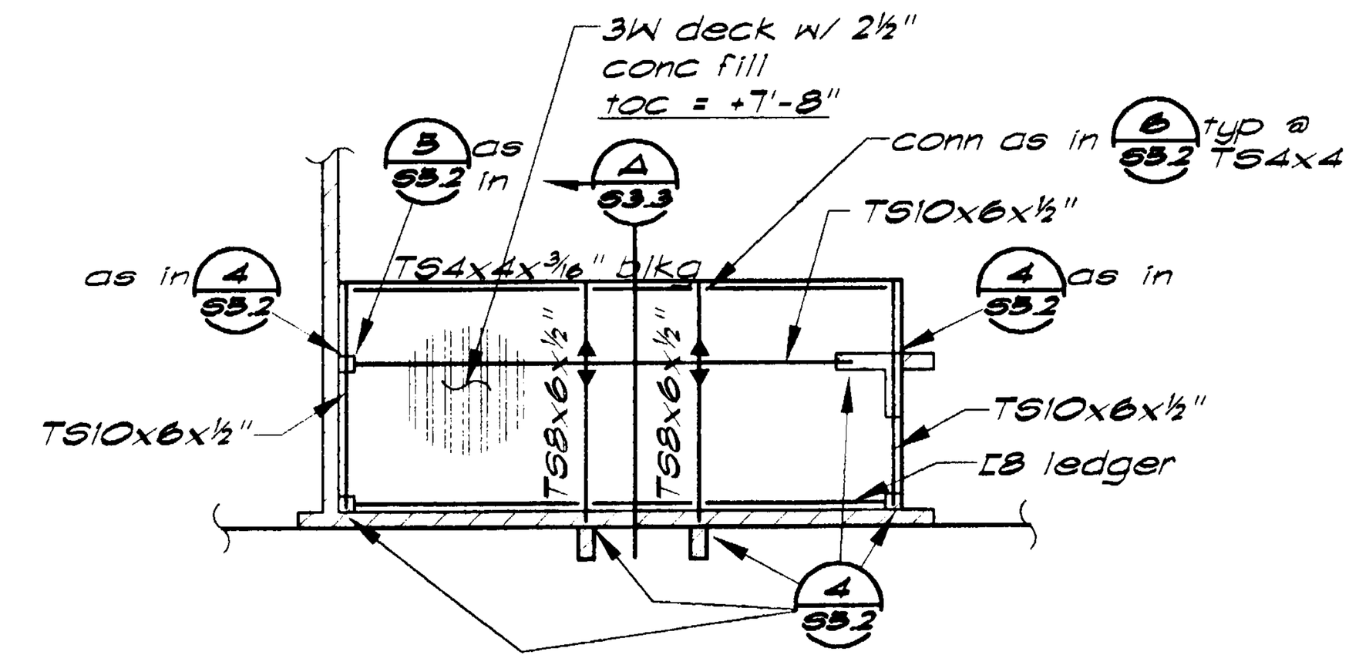
PROJECT
BALFOUR ROAD AQUATIC CENTER

DRAWING TITLE
TYPICAL DETAILS

SEAL	DRAWN BY .	PROJECT NO. 98149
LICENSED ARCHITECT JORDAN S. KNIGHTON C-015848 REN. 2-28-99 STATE OF CALIFORNIA	CHECKED BY BOR	CADD FILE NO. A2-1
	SCALE AS NOTED	DRAWING NO.
	DATE © 02-02-99	S0.2
	PRINTED 8-12-99	SHEET . OF .

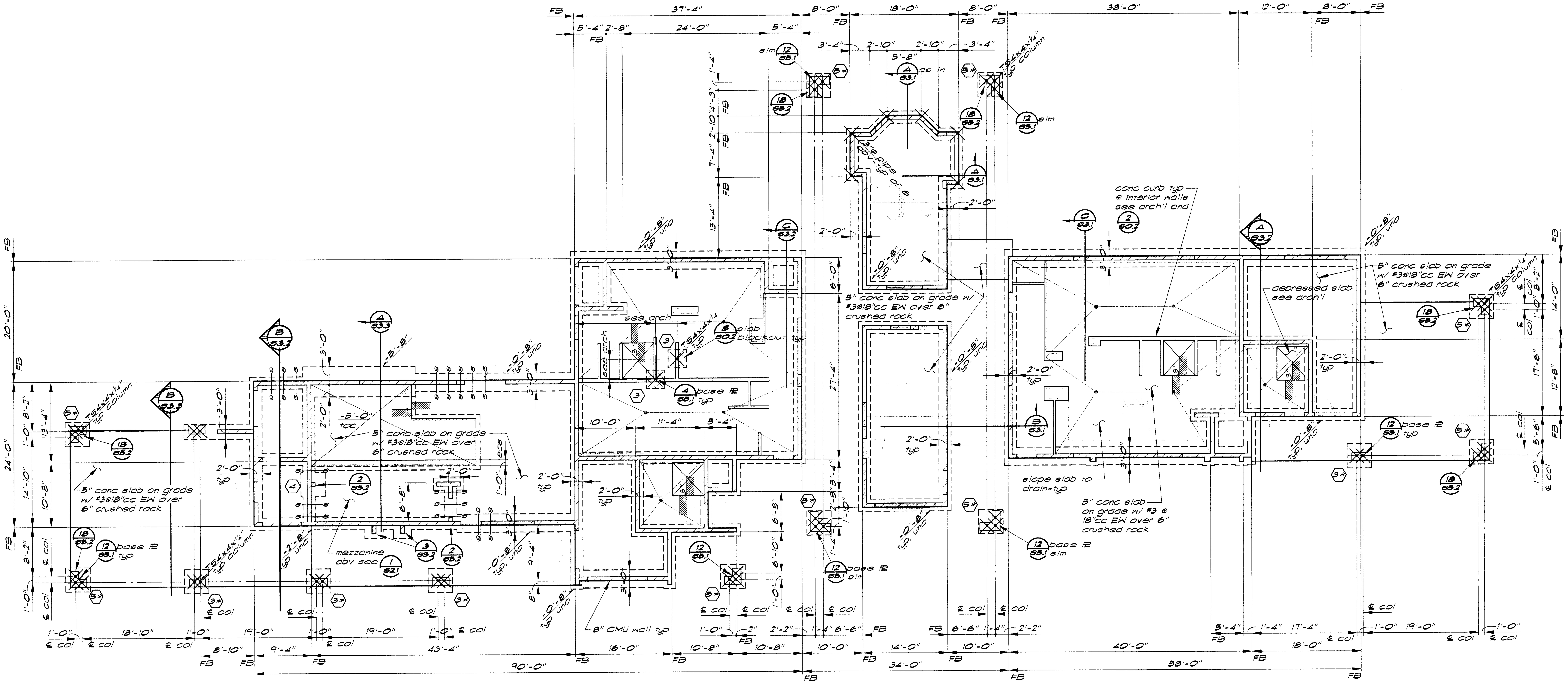


Mezzanine Framing (1/S2.1) — 1/8"=1'-0"

Type	Size	Depth	Reinforcement
3	3'-0"□	1'-6"	4-#5 ea way
4	4'-0"□	1'-6"	5-#5 ea way
5	5'-0"□	2'-0"	6-#5 ea way

(2/S2.1) Footing Schedule

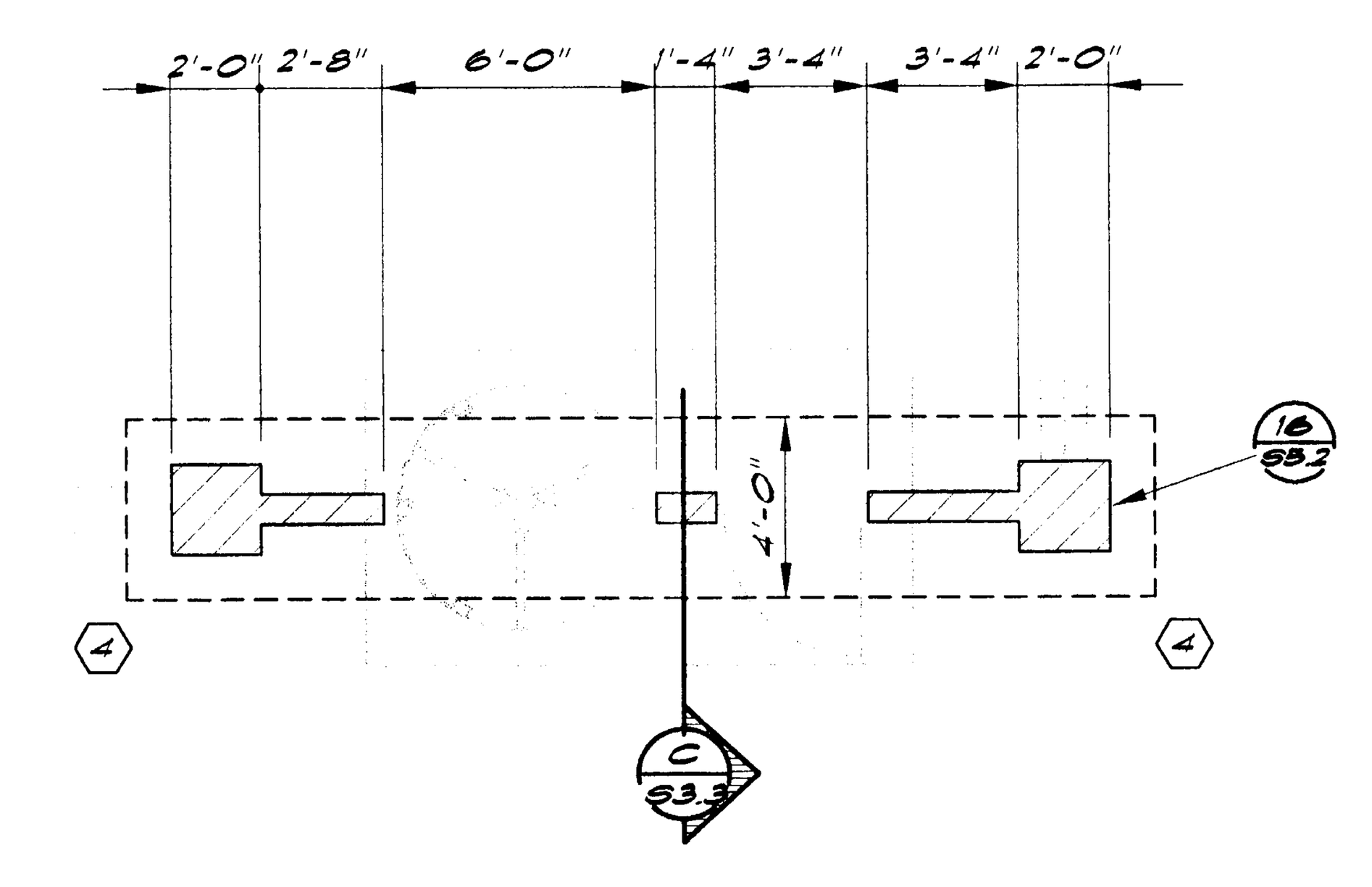
MK* indicates reinforcing top and bottom



Foundation Plan — 1/8"=1'-0"

Foundation Plan Notes

1. Prepare building pad in accordance w/ Soils Report #3347-3-99 by Joseph M. Provenzano, P.E. The soils engineer shall be retained to provide observation and testing services during the grading and foundation phase of construction per soil report recommendations. Inspection and testing reports shall be submitted to the Building Dept.
2. [hatched] -indicates 8" CMU wall -typ. See 18/S0.2 for reinf See archl for coursing and location of 4" block. AT step in course bars shall be bent.
3. X indicates TS column typ. See plan for column size. For base ₱ detail see S5.1.
4. -0'-8" indicates top of footing elevation (-0'-8" typ u.n.o.)
5. See arch for block layout
6. (MK) indicates pad footing per schedule this sheet.
7. See Arch'l drwgs for exact location of doors, windows, curbs, depressed slabs, drains & like items.
8. [⊠] indicates depressed slab area.
9. "pier" indicates special tie reinforcing req'd @ windows & door jambs, see 20/S0.2.
10. See 19/S0.2 for opening reinforcment @ windows & door jambs.
11. Provide slab on grade control joints (c.j.) as req'd by detail 1/S0.2
12. See 17/S0.2 for corner & intersection reinforcing.



Egress Gate-Foundation Plan — 1/4"=1'-0"

Note: See Arch Site Plan for location.

PB 99-1109
Balfour Road Aquatic Center
Structural
Foundation Plan

KEYNOTES

REGISTERED PROFESSIONAL ENGINEER
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NO.	DATE	REVISION COMMENTS
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PROJECT
BALFOUR ROAD AQUATIC CENTER

DRAWING TITLE
FOUNDATION PLAN

SEAL: LICENSED ARCHITECT JORDAN S. KNIGHTON C-015848 REN. 2-28-99 STATE OF CALIFORNIA

DRAWN BY .	PROJECT NO. 98149	
CHECKED BY BOR	CADD FILE NO. A2-1	
SCALE AS NOTED	DRAWING NO.	
DATE © 02-02-99	S2.1	
PRINTED 8-12-99	SHEET . OF .	

GENERAL NOTES

APPLICABLE TO ALL DRAWINGS UNLESS NOTED OR SHOWN OTHERWISE

GENERAL NOTES

100SN01-1

1. Interpretation of Drawings & Specifications
   a) For convenience, specifications have been prepared for this project and are arranged in several sections, but such separation shall not be considered as the limits of the work required of any separate trade. The terms and conditions of such limitations are wholly between the contractor and his subcontractors.
   b) In general, the working details will indicate dimensions, position and kind of construction, and the specifications, qualities and methods. Any work indicated on the working details and not mentioned in the specifications, or vice versa, shall be furnished as though fully set forth in both. Work not particularly detailed, marked or specified, shall be the same as similar parts that are detailed, marked or specified. If conflicts occur on drawings and/or specifications, the most expensive materials or methods will prevail.
   c) Should an error appear in the working details or specifications or in work done by others affecting this work, the Contractor shall notify the Architect at once and in writing. If the Contractor proceeds with the work so affected without having given such written notice and without receiving the necessary approval, decision or instructions in writing from the Owner, then he shall have no valid claim against the Owner, for the cost of so proceeding and shall make good any resulting damage or defect. No verbal approval, decision, or instruction shall be valid or be the basis for any claim against the Owner, its officers, employees or agents. The foregoing includes typical errors in the specifications or notational errors in the working details where the interpretation is doubtful or where the error is sufficiently apparent as to place a reasonably prudent contractor on notice that, should he elect to proceed, he is doing so at his own risk.
2. Construction shall conform to all applicable codes and regulations.
3. Shop Drawing Note:
   a) Shop Drawings shall be submitted in the form of one sepia transparency and two blue line prints of each sheet.
   b) The purpose of Shop Drawings submittals by the Contractor is to demonstrate to the Structural Engineer that he understands the design concept by indicating which material he intends to furnish and install, and by detailing the fabrication and installation methods he intends to use.
   c) Prior to fabrication, Shop Drawings shall be submitted for review by the Structural Engineer. Shop Drawing submittals shall include, but are not necessarily limited to, structural steel, reinforcing steel, & glued laminated beams.
   d) Prior to submission the Contractor shall review all submittals for conformance with the Contract Documents and shall stamp submittals as being "Reviewed for Conformance".
   e) Shop Drawings submittals processed by the Structural Engineer are not Change Orders.
   f) Any detail on the Shop Drawing that deviates from the Contract Documents shall clearly be marked with the note "This a change".
   g) Shop drawings or calculations submitted for review that require resubmittal for re-review shall be billed hourly for such time to the General Contractor. Re-review will not proceed without written approval from the General Contractor for additional engineering review services.
4. Safety Note:
   a) It is the Contractors responsibility to comply with the pertinent sections, as they apply to this project, of the "Construction Safety Orders" issued by the State of California latest edition, and all OSHA requirements.
   b) The Owner and the Structural Engineer do not accept any responsibility for the Contractor's failure to comply with these requirements.
   c) The Contractor shall be responsible for adequate design and construction of all forms and shoring required.
5. The contractor shall notify the Architect and Structural Engineer where a conflict or discrepancy occurs between the Structural drawings and any other portion of the Contract Documents or existing field conditions. Such notification shall be given in due time so as not to affect the construction schedule. In case of a conflict between Structural drawings and specifications the more restrictive condition shall take precedence unless written approval has been given for the least restrictive. Contractor shall verify all dimensions with Architectural prior to commencing any work.
6. Where no specific detail is shown, the construction shall be identical or similar to that indicated for like cases of construction on this project. Should there be any question, contact the Architect and Structural Engineer prior to proceeding.
7. When construction attaches to an existing building, a complete set of drawings of the existing building shall be kept on the job site. Contractor to obtain these drawings from the Owner.
8. Contractor shall provide an allowance equal to 2% of the bid for structural steel, misc. iron and reinforcing steel to be used at the discretion of the Structural Engineer. Unused amount to revert to the Owner upon completion of the job.
9. Any substitutions for structural members, hardware or details shall be reviewed by the Architect and Structural Engineer. Such review will be billed on a time and materials basis to the General Contractor with no guarantee that the substitution will be allowed.
10. Do not scale drawings. Contact the Architect or Structural Engineer for any dimensions not shown.
11. These drawings are not complete until reviewed and accepted by local Building Officials and signed by the Owner and the Structural Engineer.

ABBREVIATIONS

100SN03-1

AB	Anchor Bolt	MI	Malleable Iron
abv	Above	(n)	New
blw	Below	NIC	Not in Contract
bof	Bottom of Footing	NS	Near Side
btwn	Between	nts	Not to Scale
cc	Center to Center	NW	Normal Weight
CJ	Control Joint	OH	Opposite Hand
clr	Clear	OSB	Oriented Strand Board
CMU	Concrete Masonry Unit	pc	Piece
CNJ	Construction Joint	pp	Partial Joint Penetration
cont	Continuous	PT	Pressure Treated
contr	Contractor	rwd	Redwood
cp	Complete Joint Penetration	SC	Slip Critical
csk	Countersink	sim	Similar
DF	Douglas Fir	SMS	Sheet Metal Screw
DL	Dead Load	SP	Structural Plywood
do	Ditto	stfnr	Stiffener
dwg	Drawing	stgrd	Staggered
(e)	Existing	t&b	Top & Bottom
EF	Each Face	t&g	Tongue & Groove
EJ	Expansion Joint	thrd	Threaded
El	Elevation	tn	Toe Nail
EN	Edge Nailing	to	Top of
eos	Edge of Slab	toc	Top of Concrete (slab uno)
eq	Equal	tof	Top of Footing or Top of Framing
EW	Each Way	tos	Top of Steel
EWEF	Each Way Each Face	tow	Top of Wall
FB	Face of Block(or Brick) or Flat Bar	TS	Tube Steel
FC	Face of Concrete or Framing Clip(Simpson A35)	uno	Unless Noted Otherwise
FF	Finish Floor	w/	with
FS	Face of Stud or Far Side	w/o	without
ga	Gauge or gage	wp	Work Point
glb	Glued Laminated Beam	WS	Wood Screw
hdr	Header	WWF	Welded Wire Fabric
HSB	High Strength Bolt	℄	Centerline
ht	Height	PL	Plate
jh	Joist Hanger	WF	Wide Flange
LL	Live Load	#	Number or Pounds
LLH	Long Leg Horizontal	sq	Square
LLV	Long Leg Vertical	⌀	Round
LS	Lag Screw	[symbol]	Cont Wood in Section
LW	Light Weight	[symbol]	Wood Blocking in Section
MB	Machine Bolt	[symbol]	End of Wood Piece
mfr	Manufacturer	(a)	"member" above
		(b)	"member" below

DESIGN CRITERIA

100SN02-1

1. Codes and Standards
   1997 Uniform Building Code (UBC)
   1989 ACI
   1989 AISC
2. Vertical loads
   Roof Live Load = 16.0 psf
   Live loads are reduced where permitted by code.
3. Lateral loads
   Seismic:
   Zone 3 ; Z = 0.3
   R = 4.5 ; I = 1.0
   Soil Profile Type: S_D
   Near Source Factors: (for Z = 0.4 only)
   Na = 1.0 ; Nv = 1.0
   Wind:
   70 mph – Exposure C
   Iw = 1.0
4. Soils Values
   Allowable soils pressure
   1) DL = — psf
   2) DL + LL 2500 psf
   3) DL + LL + Seismic 3333 psf

   Footing
   Minimum depth = 12"
   Minimum width = 12"

TESTS AND INSPECTIONS

100SN04-1

1. Tests and Inspections shall be provided by a qualified testing agency as required below and shall conform to the requirements of the 1997 UBC Section 1701. Testing and inspection records shall be kept for all structural concrete

Tests:

- ☐ Fill Compaction
- ■ Reinforcing Steel **
- ■ Concrete
- ■ Structural Steel **
- ■ Masonry
- ■ Grout and Mortar
- ☐ Epoxy & Expansion Anchors
- ☐ Shotcrete

** Submit mill certificates to verify material properties

Inspections:

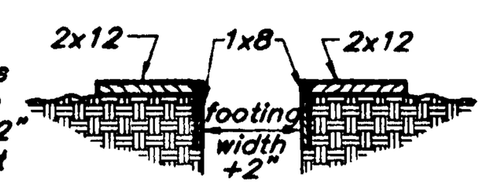
- ■ Footing Excavation
- ☐ Pile/Pier Installation
- ■ Reinforcement Placement
- ■ Concrete Placement
- ■ Shop Welding *
- ■ Field Welding
- ■ High Strength Bolting
- ■ Masonry Placement & Grouting (during prism preparation and prior to closing cleanouts)
- ☐ Shear Stud Installation
- ☐ Epoxy & Expansion Anchors
- ☐ Shotcrete

* Welding must be performed in a shop approved by the building official and structural engineer

FOUNDATIONS

330SN03-1

1. All foundation work shall be done in accordance with the requirements of the Soils Report #3347-3-99 by Joseph M. Provenzano, P.E.
2. Foundations shall bear on lean mix concrete. See notes and details on sheet S3.1.
3. All filling, backfilling and compaction shall be done under the observation of the Soils Engineer and must be compacted to a minimum density of 90% in accordance with the procedure outlined in the soils report.
4. Building pad construction shall conform to the requirements of the soils report. The extent and depth of overexcavation and placement of engineered fill shall at a minimum be as shown on the plans. Final depth and extent of excavation and fill shall be determined at time of construction by a representative of the Soils Engineer. Foundation depths indicated on plans are for estimating purposes only.
5. Bottoms of all foundations shall be level. Changes in bottom of foundation elevation shall be made according to Stepped Footing Detail on the Typical Detail Sheet.
6. All pile caps, grade beams, tie beams & other footings shall be formed unless specifically approved by the Structural Engineer. Foundations may be cast in neat excavations provided written approval is obtained and footings are increased 2" in width. Use 2 x 12 plank at edge to protect against sloughing, as required.



7. Notify the Structural Engineer 48 hours before casting foundations.
8. The Soils Engineer shall advise the Building Official in writing that:
   a. The building pad was prepared in accordance with the soils report.
   b. The utility trenches have been properly backfilled and compacted and;
   c. The foundation excavations, forming and reinforcement comply with the report and approved plan.

CONCRETE

330SN01-1

1. Structural concrete shall attain 28 day compressive strength as required in note #26. Maximum slump shall not exceed 4 inches.
2. Concrete mix design shall be prepared by an independent laboratory and reviewed by the Structural Engineer.
3. Cement shall conform to ASTM C-150 type I or II.
4. Concrete aggregates shall conform to ASTM C-33 for normal weight and ASTM C-330 for light weight.
5. Non-shrink grout or drypack shall consist of a premixed nonmetallic formula.
6. Reinforcing steel shall conform to ASTM A-615 Grade 60 for #4 and larger, and ASTM A-615 Grade 40 for #3 and smaller, except reinforcing steel to be welded shall conform to ASTM A-706.
7. All preheating and welding of reinforcing bars shall be done in accordance with AWS D1.4 latest edition and shall be continuously inspected by a qualified laboratory. Contractor shall furnish to the laboratory, rebar mill certificates.
8. Reinforcing steel shall be fabricated according to "Manual of Standard Practice for Reinforced Concrete Construction".
9. Wire fabric shall conform to ASTM A-185.
10. Dimensions shown for location of reinforcing are to the face of main bars and denote clear coverage. Concrete coverage shall be as follows:
    Concrete deposited directly against ground (except slabs)---3"
    Concrete exposed to ground but placed in forms---2"
    Tied Columns (main bars)---2"
    Beams (top bars)---1-1/2"
    Beams (all other main reinforcing)---2"
    Walls (exterior face)---1-1/2"
    Walls (interior face)---3/4"
    Slabs (on forms)---3/4"
    Slabs (on ground)---2" clear from top uno
11. Splices in continuous reinforcement shall be lapped uno. In no case shall splices be less than 48 bar diameters. Splices in adjacent bars shall be not less than 5'-0" apart. Splice continuous bars in soil-bearing grade beams as follows: top bars at centerline of support; bottom bars at mid-span. Splice continuous bars in spandrel beams, wall beams, etc. as follows: top bars at mid-span; bottom bars at centerline of support. All bars size #14 and larger shall be continuous for the full length shown. Splices in WWF shall be 1-1/2 meshes wide.
12. All hooks shall be standard hooks unless otherwise shown or noted.
13. Construction joints shall be made rough and all laitance removed from the surface. Concrete may be roughened by chipping the entire surface, sand blasting, or raking the surface to provide 1/4" deep deformations.
14. Remove all debris from forms before casting any concrete.
15. Reinforcing, dowels, bolts, anchors, sleeves, etc., to be embedded in concrete shall be securely positioned before placing concrete.
16. Walls shall be cast in horizontal layers of 2'-0" maximum depth.
17. Concrete in walls, piers or columns shall set at least 2 hours before placing concrete in beams, spandrels, or slabs supported thereon.
18. Horizontal wall bars in double layer walls shall be staggered.
19. Dowel all vertical reinforcing in walls and columns from foundation with same size bar.
20. Consolidate concrete placed in forms by mechanical vibrating equipment supplemented by hand-spading, rodding or tamping. Use equipment and procedures for consolidation of concrete in accordance with the recommended practices of ACI 309 to suit the type of concrete and project conditions. Concrete shall not be dropped through reinforcing steel (as in walls) so as to cause segregation of aggregates. In such cases hoppers and chutes or trunks of variable lengths shall be used so that the free unconfined fall of concrete shall not exceed 6 feet.
21. Drill through steel columns, beams and plates to pass continuous reinforcing.
22. No wood spreaders allowed. No wood stakes allowed in areas to be concreted.
23. Additional reinforcing in precast or tilt-up panels required for lifting stresses shall be supplied by Contractor.
24. Provide 2 – #5 x 4'-0" diagonal reinforcing at mid-depth of slab at all re-entrant corners typical.
25. All saw cutting shall be done after initial set has occurred to avoid tearing or damage by the saw blade, but before initial shrinkage has occurred.
26. CONCRETE STRENGTHS:

Item	f'c at 28 days	Max Aggregate Size	Weight	Max w/c Ratio
Footings	3000	1 1/2"	150	0.50
Slab	3000	1"	150	0.50

STRUCTURAL STEEL

510SN01-1

1. Fabrication, erection and materials shall conform with the AISC Specification for the Design, Fabrication and Erection of Structural Steel for Buildings and the Uniform Building Code, latest editions.
2. Structural Steel rolled shapes and plates shall conform with ASTM A-36 or A-572, grade 50 as noted.
3. Steel Pipe shall conform to ASTM A-53, Types E or S, Grade B.
4. Structural Tubing shall conform to ASTM A-500, Grade B.
5. All structural steel shall receive minimum of one shop coat of red primer paint. Do not paint areas to be field welded, to receive friction type high strength bolts, or to be embedded in concrete. Provide additional painting as noted in the specifications.
6. All structural steel shall be erected plumb and true to line. Temporary bracing shall be installed and shall be left in place until other means are provided to adequately brace the structure.
7. Place non-shrink grout under all base plates before adding vertical load.
8. Wrap structural steel embedded in concrete with 6"x6"/W1.4 x W1.4 WWF. Structural steel below grade shall have 3 inches minimum of concrete cover.
9. Bolted connections shall consist of unfinished bolts conforming to ASTM A-307 unless noted otherwise. Where high strength bolts are indicated, bolts conforming to ASTM A-325 or ASTM A-490 shall be provided.
10. "Slip-critical" bolted connections:
    a) "Slip-critical" connections (A325SC design values with special inspection) are required at all braced frame connections, at all connections along chord lines and drag lines (as noted on plans), and at all bolts in oversized or slotted holes.
    b) The special inspector must be present during installation and tightening operation of "slip-critical" connections.
11. Provide 1/2" diameter stitch bolts and ring fills, spaced at not more than 2'-0" on center for all double angle members.
12. At wood to steel parallel contact, bolt with 1/2" diameter bolts at maximum 24"cc.
13. Holes for unfinished bolts shall be of the same nominal diameter of the bolt plus 1/16". Use standard AISC gage and pitch for bolts except as noted otherwise.
14. Holes for anchor bolts embedded in concrete shall be of the same nominal bolt diameter plus 3/16" unless noted otherwise.
15. Welding shall be done by the electric arc process in accordance with American Welding Society Standards, using only certified welders. All groove welds shall have complete penetration unless noted otherwise. All exposed welds shall be ground smooth.
16. Weld lengths called for on plans are the net effective lengths required.
17. Minimum fillet welds: 3/16" @ t < 1/2"
    1/4" @ t < 3/4"
    5/16" @ t > 3/4"
18. Welding Procedure Specifications (WPS) for shop and field prequalified weld joints and weld joints qualified by test shall be prepared for review prior to fabrication. All welding procedure items such as base metals, welding processes, filler metals and joint details that meet the requirements of AWS D1.1 Section 5.1 shall be considered as prequalified. Any change or substitution that is beyond the range or tolerance or requirements for prequalification shall be qualified by test per AWS D1.1 Section 5 part B. Welds at base metals over 2 inches in thickness are not allowed as prequalified joint welds.
19. For nondestructive testing of welded connections excluding primary members of moment resisting frames:
    a) Welded connections shall be tested by nondestructive methods for compliance with AISC chapter J2 and job specifications. Ultrasonic Testing shall be in accordance with AWS D1.1 ASTM E164 and ASME Section V. Radiography shall be in accordance with AWS D1.1, ASTM E94 and E99, and ASME Section V. This testing shall be part of the special inspection requirements of UBC Section 1701 performed by an approved independent testing laboratory as follows:
       1. Base metal thicker than 1 inch when subject to through thickness weld shrinkage strains.
       2. All complete penetration groove or butt welds.
       3. All partial penetration groove welds when used in column splices.
    b) Any material discontinuities shall be accepted or rejected on the basis of defect rating in accordance with the (larger reflector) criteria of AISC chapter J2.

HOLLOW CONCRETE UNIT MASONRY (BLOCK)

420SN01-1

1. Concrete block units shall conform to ASTM C-90 Type I units. Compressive strength of units to be 1000 psi for gross area and 2000 psi for net area. F'm = 1500 psi. F'm shall be verified in accordance with section 2105.3 of the 1994 UBC. Block units shall be fabricated with a "CalTrans Core" (1 1/2" face shells).
2. Mortar shall be proportioned to attain a 28 day compressive strength of 1800 psi. Use a minimum of 1 part Portland cement to 1/4 – 1/2 part hydrated lime with sand at 2-1/2 to 3 times combined volume of cement and lime. 2" cubes shall test 1800 psi in 28 days. When required, mortar strength shall be verified in accordance with section 2105.4 of the 1994 UBC.
3. Grout shall be proportioned to attain a 28 day compressive strength of 2000 psi. Use a minimum of 1 part Portland cement to 3 parts sand. Add 1 lb. of Sika Grout Aide Type II, or equal, per 100 lb. of cementitious material. 1 to 2 parts of pea gravel shall be used where the least clear cell dimension exceeds 2 inches. Not more than 5% of the pea gravel shall pass the No. 8 sieve and 100% shall pass the 3/8" sieve. When required, grout strength shall be verified in accordance with section 2105.5 of the 1997 UBC.
4. Reinforcing steel shall conform to ASTM A-615 Grade 60 for #4 and larger, Grade 40 for #3 and smaller.
5. Minimum rebar clearance to face shell is one bar diameter or 1/2", whichever is greater.
6. Before block is placed on concrete, thoroughly clean concrete of all laitance and all loose material. Roughen as in a concrete construction joint.
7. Concrete block masonry shall be built to preserve the unobstructed vertical continuity of the cells. All head and end joints shall be solidly filled with mortar for a distance in from the face of the wall or unit not less than the thickness of the longitudinal face shells. Bond shall be provided by lapping successive courses or by equivalent mechanical anchorage.
8. Vertical cells shall have vertical alignment sufficient to maintain a clear unobstructed continuous vertical cell.
9. Low-lift grouted construction shall conform to 1997 UBC Section 2104.6.1.1.2. High-lift grouted construction shall conform to 1997 UBC Section 2104.6.1.1.3.
10. Clean out openings shall be provided at the bottoms of all cells to be filled at each lift or pour of grout where such lift or pour of grout is in excess of 4'-0" in height. Any overhanging mortar or other obstruction or debris shall be removed from inside of such cells. The clean outs shall be sealed after inspection and before grouting. Mechanically vibrate all grout pours.
11. Vertical reinforcing shall be held in position at top and bottom and at intervals not to exceed 192 bar diameters.
12. Thoroughly clean all cells and bond beams of mortar before grouting.
13. All cells shall be filled solidly with grout. All grouting shall be done under the continuous observation of a qualified inspector where indicated on plans.
14. When grouting is stopped for one hour or longer, horizontal construction joints shall be formed by stopping the pour of grout 1-1/2" below the top of the uppermost unit.
15. Every vertical bar in walls shall lap 48 diameters with a dowel of the same size extending from the foundation. Locate vertical reinforcing at centerline of wall unless shown or noted otherwise. Carry each dowel to within 3" of the bottom of the foundation and terminate with 90 degree hook. Dowels shall be straight and plumb.
16. Place all horizontal bars in bond beam units. When 2 bars are used, stagger laps minimum of 5'-0".
17. Provide 2 – #5 bars with matching footing dowels (full height of wall at jambs and extending a minimum of 2'-0" past edges of openings at head and sill) each side of all openings and each end of all walls, unless noted otherwise on drawings.
18. All embedded items (bolts, straps, etc.) shall be secured in place prior to grouting. Cut a hole in the face shell to attain a minimum of 1" grout all around embedded items.
19. All bolts in masonry shall be ASTM A307 headed bolts.
20. Use open end block for all stack bond construction.
21. All rebar shall be lap spliced as follows (u n o):

Bar Type	Lap Length	Notes
Vertical bars	48d	Splices for multiple bars in the same cell must be stgrd 24" or lapped 62d
Horizontal bars	48d	
Jamb bars	72d	
Chord bars	72d	Splices for multiple bars in the same cell must be stgrd 24" or lapped 94d
Vertical bars @ ends & corners	72d	
	72d	

WINDOW SYSTEM DESIGN CRITERIA

100SN10-1

1997 UBC Wind Speed– 75 mph exposure C.

1. All mullions and their connections shall be designed to span between structural supports as shown on drawings. Verify ceiling heights with Architectural drawings.
2. All mullions and their connections shall allow for a relative movement between stories of not less than 1" due to seismic loads.
3. Submit complete shop drawings and calculations signed by a Civil Engineer registered in the state in which the project is located, prior to fabrication.

METAL DECK NOTES

530SN01-1

1. Provide metal decking of type and gauge as shown on plans.
2. Metal floor deck shall be composite type, conforming to ASTM A653, structural quality, with minimum yield strength of 38 ksi and shall be zinc coated per ASTM A625, G-60 grade coating.
3. Metal roof deck shall conform to ASTM A653, structural quality, with minimum yield strength of 38 ksi and shall be galvanized per ASTM A625, Grade 60 coating.
4. Prior to fabrication, the Contractor shall submit shop drawings for the metal decking, showing deck gauge, size and layout as well as closure conditions, welds to supports and side lap details.
5. Connection and welding of decking to structural supports and deck side seams shall be as specified in the structural drawings.
6. The General Contractor shall coordinate the load requirements from all subcontractors so that no combination of loads exceeds the limitations given in design criteria.
7. All reinforced openings in metal deck shall be installed by metal deck subcontractor.
8. At metal decks to receive concrete, absolutely no conduit or piping of any type is to be placed horizontally within the depth of the concrete above the metal deck.
9. At metal decks without concrete, hang no more than 50 lbs. at 1-1/2" deck (20 gauge min.) and 100 lbs. at 3" deck (20 gauge min.) per metal deck rib in any span; space hangers no closer than 2'-0"cc perpendicular to span.
10. Where suspension or hanger wires are required by others, verify and coordinate locations, patterns, spacings, etc. with the appropriate trade. Drill or punch holes at bottom of deck flutes of sufficient size to pass support wires. Wire supports shall be looped and secured with a minimum of three (3) tight turns around a minimum 1-1/2" x 8" long furring channel or No. 3 x 8" long reinforcing bar centered above the hole and laid in the deck flutes.

KEYNOTES

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PROJECT
BALFOUR ROAD AQUATIC CENTER

DRAWING TITLE
GENERAL NOTES

SEAL
LICENSED ARCHITECT
JORDAN S. KNIGHTON
C-015848
REN. 2-28-99
STATE OF CALIFORNIA

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Structural
Balfour Aquatic Center Record Set 11/00
General Notes

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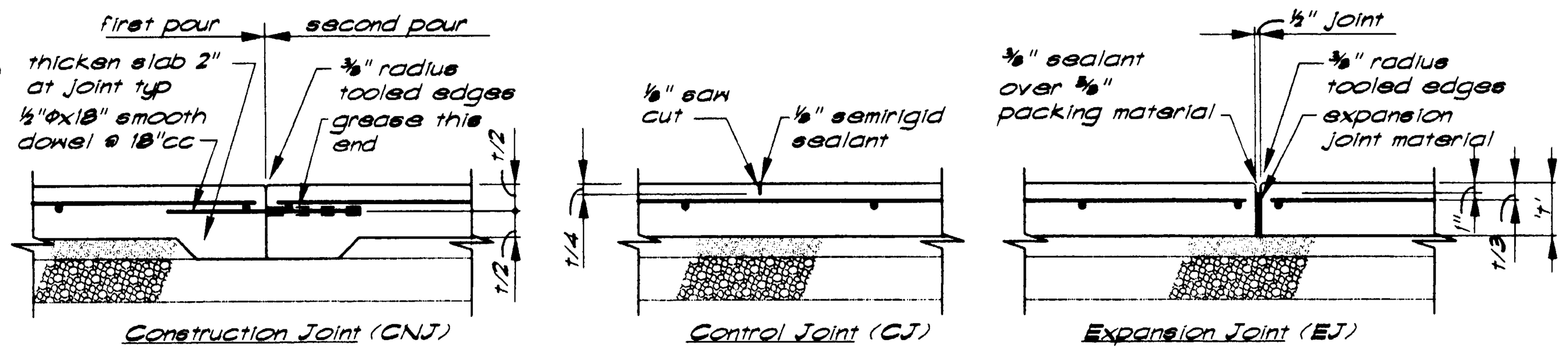
TYPICAL DETAILS

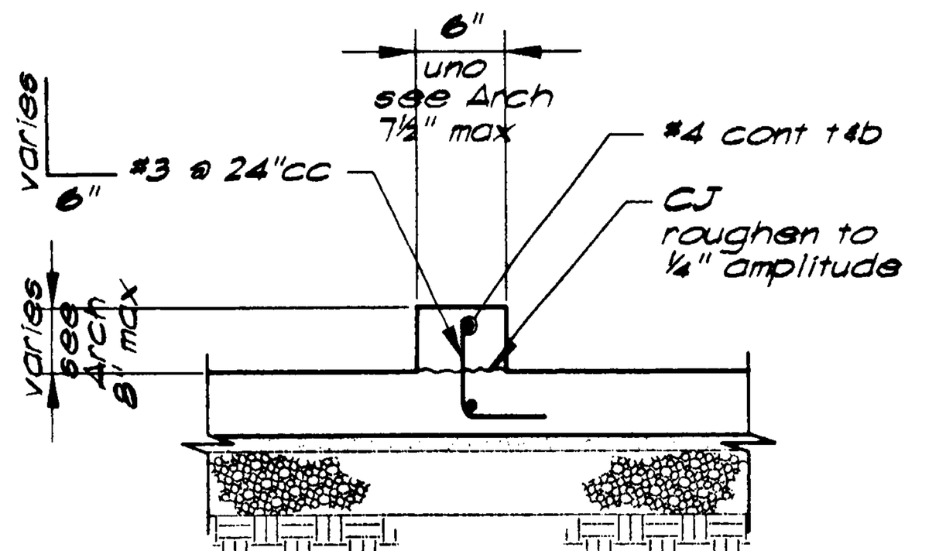
APPLICABLE TO ALL DRAWINGS UNLESS NOTED OR SHOWN OTHERWISE



Note:
Construction joints and control joints shall divide slab into areas not exceeding 225 sq ft without reentrant corners and with length to width ratios not exceeding 1½ to 1. Contractor shall submit layout plan showing proposed control and construction joint locations. Joint spacing shall not exceed 15 feet in either direction. Semirigid sealant to be Euclid Euco #700 or equal.

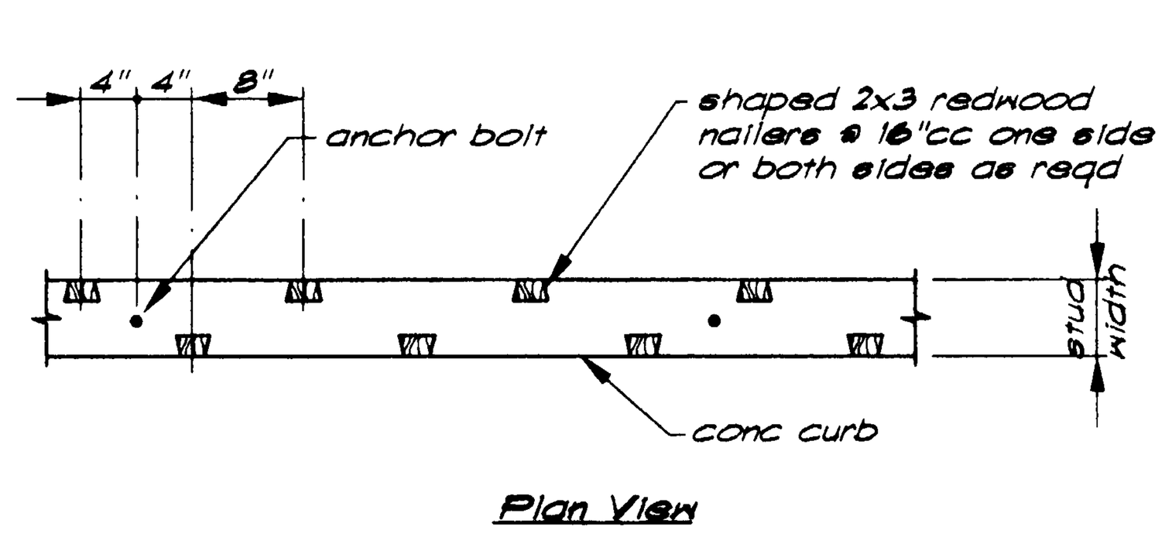
Slab-On-Grade Joints (1/S0.2)

330S001-12



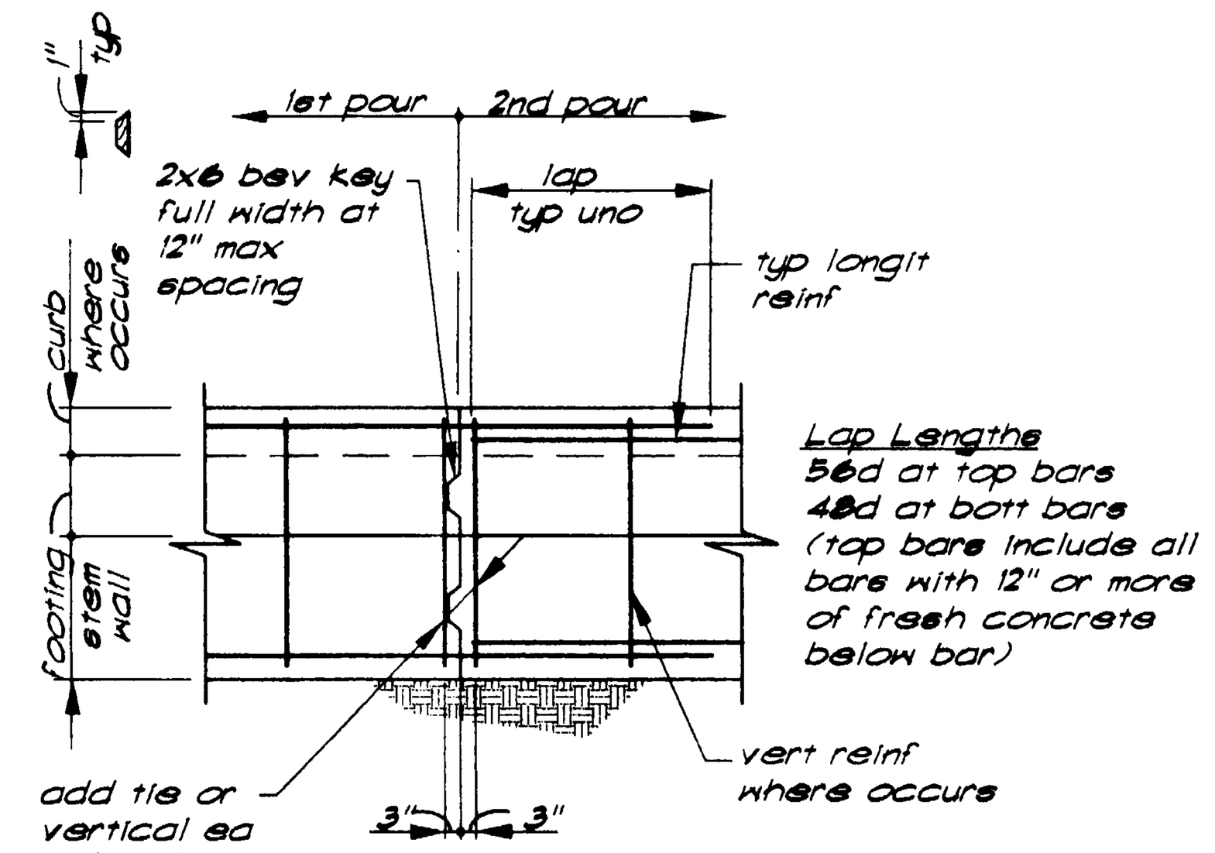
Typical Curb (2/S0.2)

330S007-12



Nailers In Conc Curb (3/S0.2)

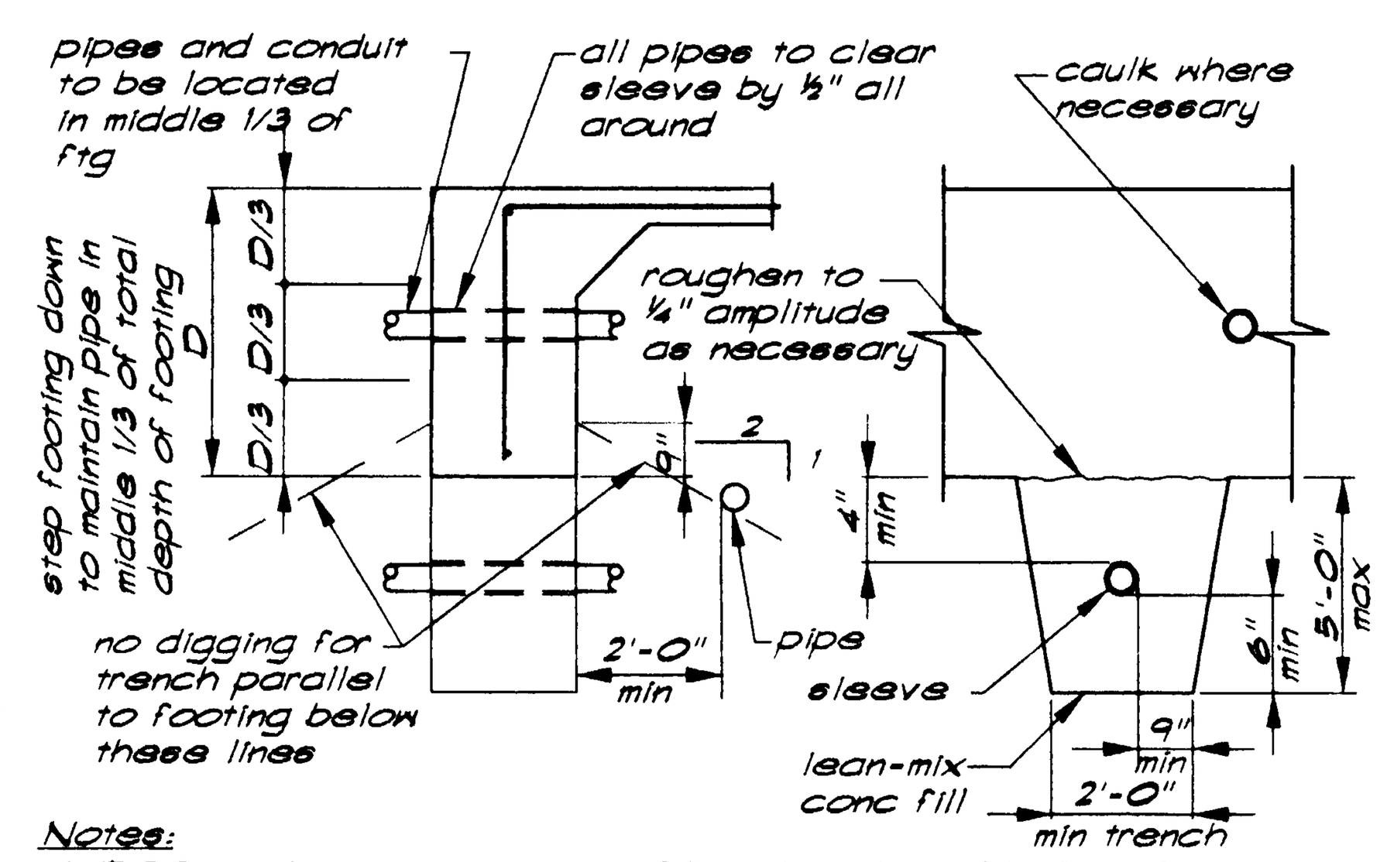
330S006-12



Option: Use metal K-lath in lieu of keys for full depth of foundation at unexposed foundations only.

Typical Foundation Construction Joint (4/S0.2)

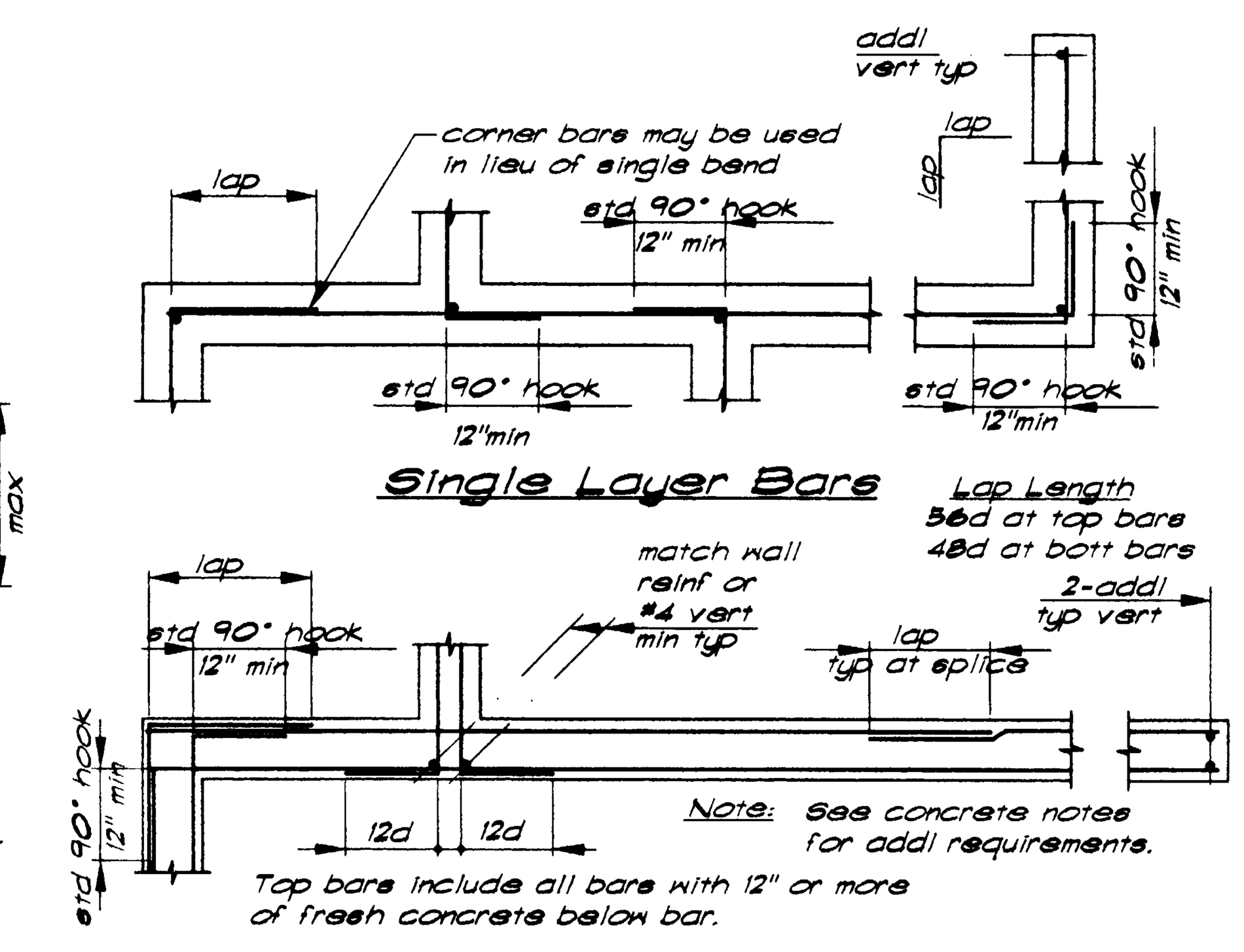
330S016-24



Notes:
1. 1500 psi lean mix concrete fill to be placed before ftg is cast. Make same width as ftg and full width of pipe trench.
2. Step ftg if pipe occurs in lower third of original footing depth.
3. No pipes shall be placed below spread ftgs or within 2 to 1 bearing zone around spread footing.
4. If pipe is in place prior to casting concrete, wrap pipe w/ 1" styro-foam insulation in lieu of sleeve.
5. Pipes or conduits are not allowed parallel in footing.

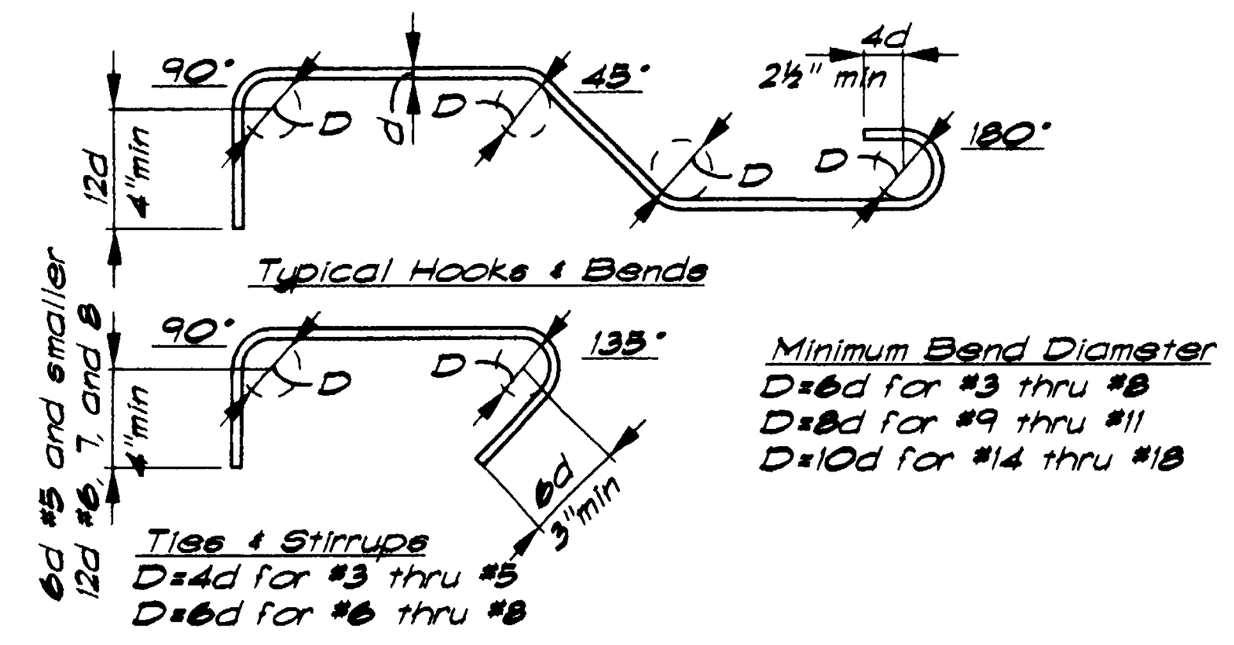
Concrete Footings at Pipes & Conduits (5/S0.2)

330S005-32



Corner Reinforcing at Concrete Walls & Ftgs (6/S0.2)

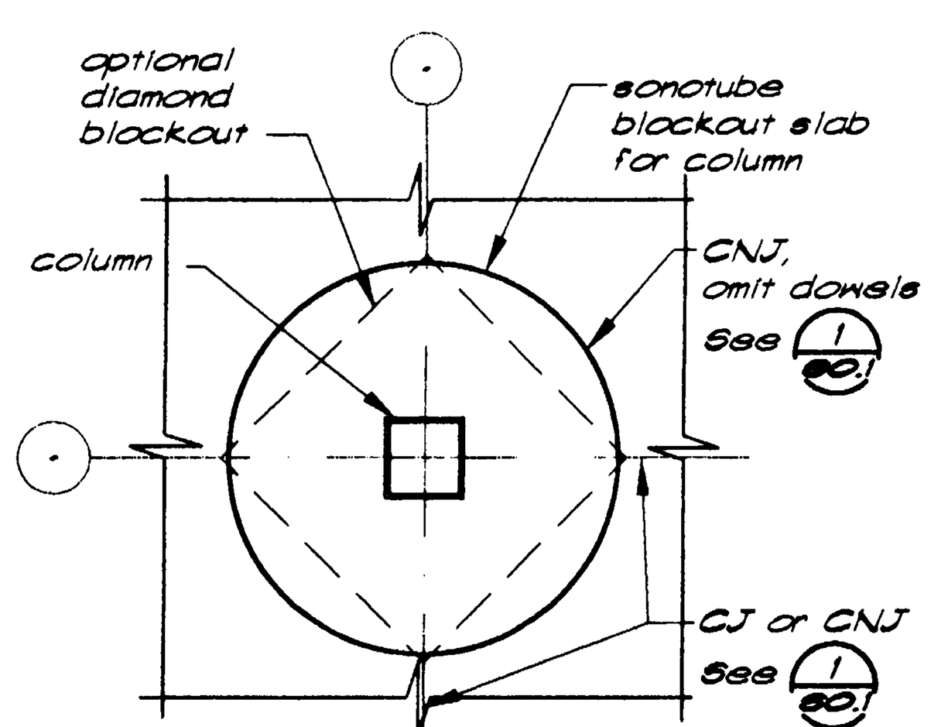
330S008-32



Note: All hooks shall be 90° standard hooks unless otherwise shown or noted.

Standard Rebar Hooks and Bends (7/S0.2)

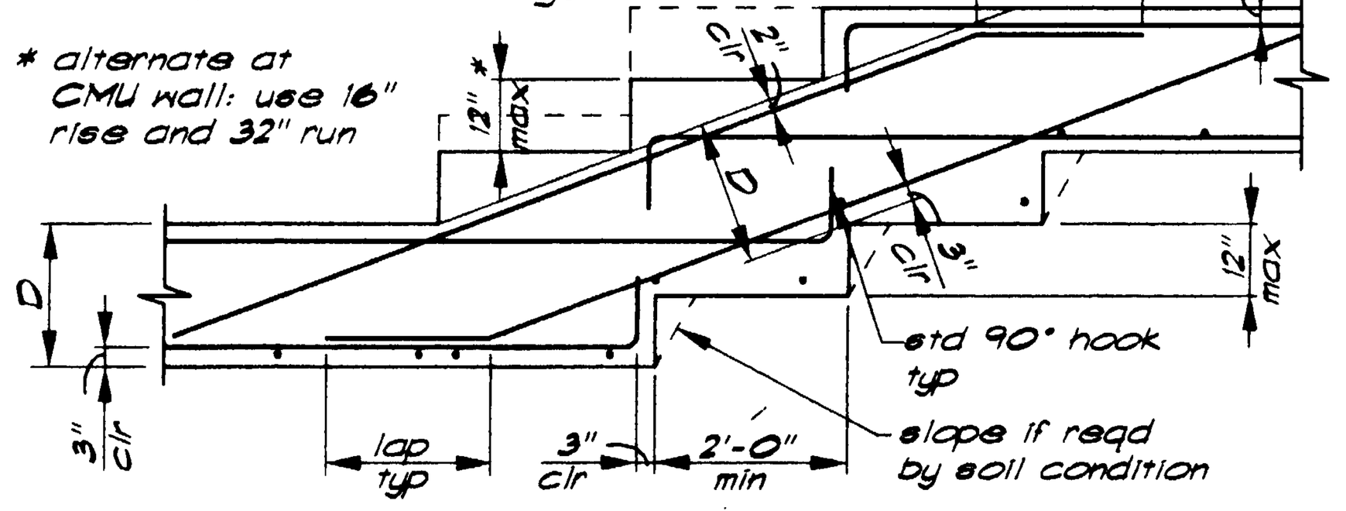
330S003-12



Slab Blockout (8/S0.2)

330S004-12

Note: verticals not shown for clarity. Provide verticals as noted on drawings

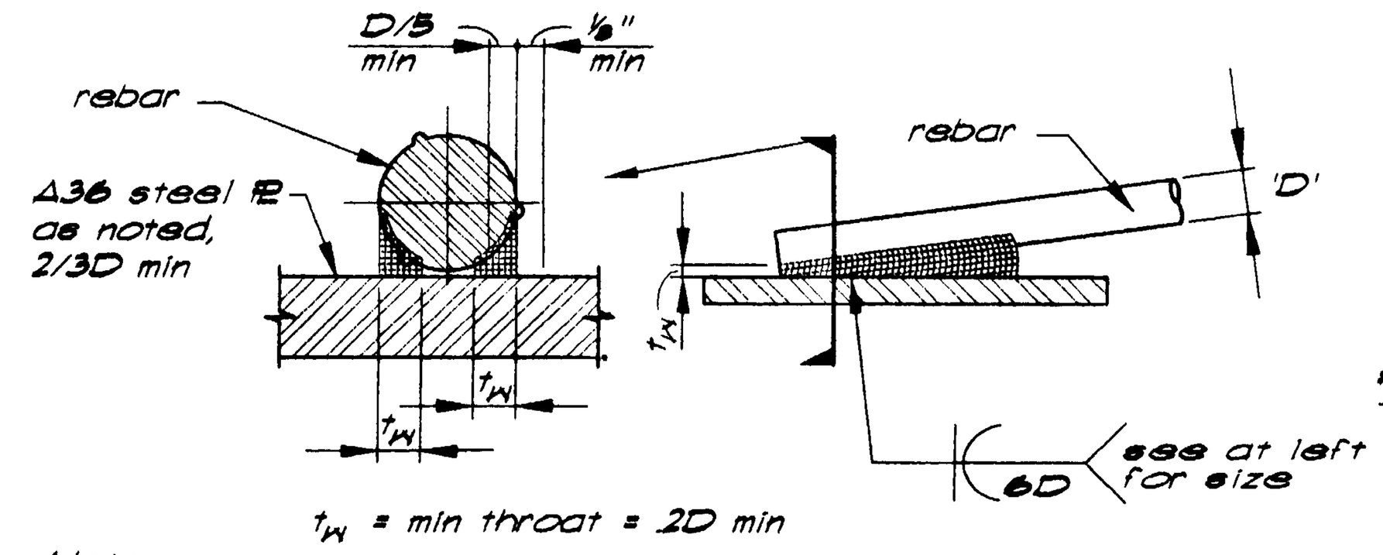


Indicated on Foundation Plan by:

Lap Length
56d at top bars, 48d at bott bars
(top bars include all bars with 12" or more of fresh concrete below bar)

Typical Footing Step (9/S0.2)

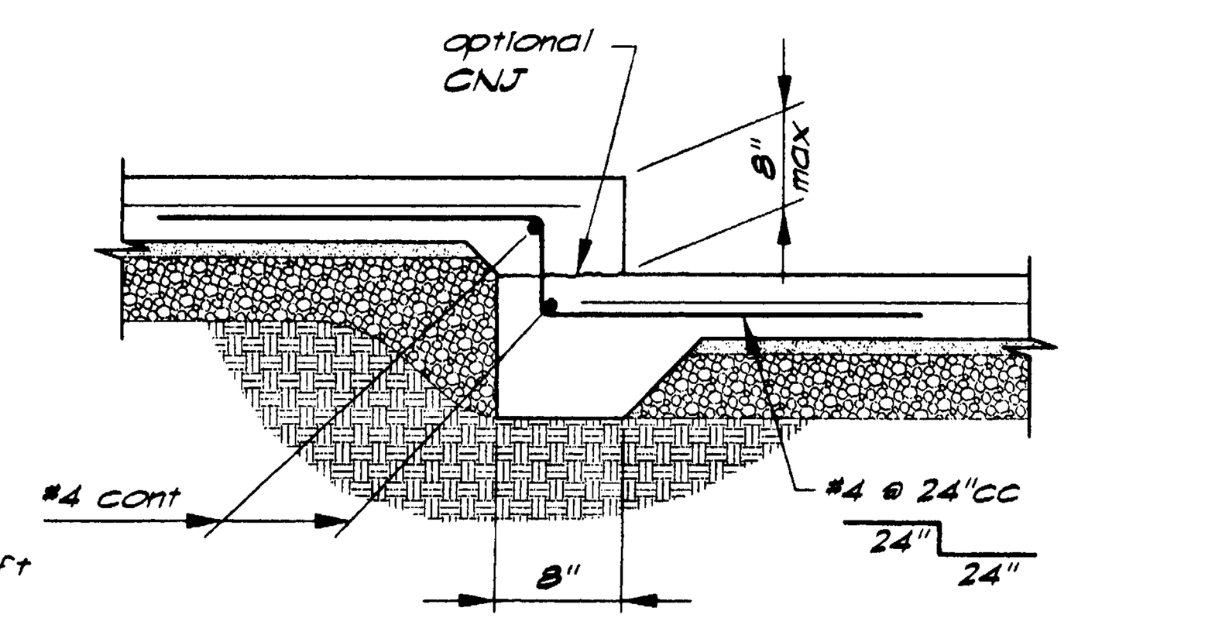
330S010-32



Notes:
1. Rebar shall be ASTM A706 or ASTM A615 with carbon equivalent no greater than .75% and conforming to UBC Standard 19-2.
2. All preheating and welding shall be done in accordance with AWS D1.4.
3. All welding shall be continuously inspected by a qualified laboratory.

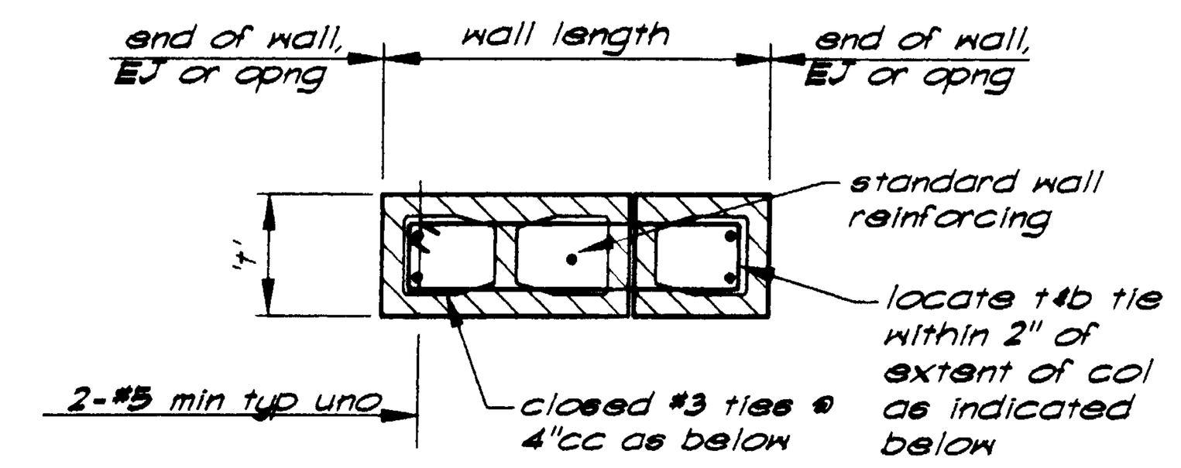
Rebar Welding Detail (10/S0.2)

330S002-32



Typical Step in Slab (11/S0.2)

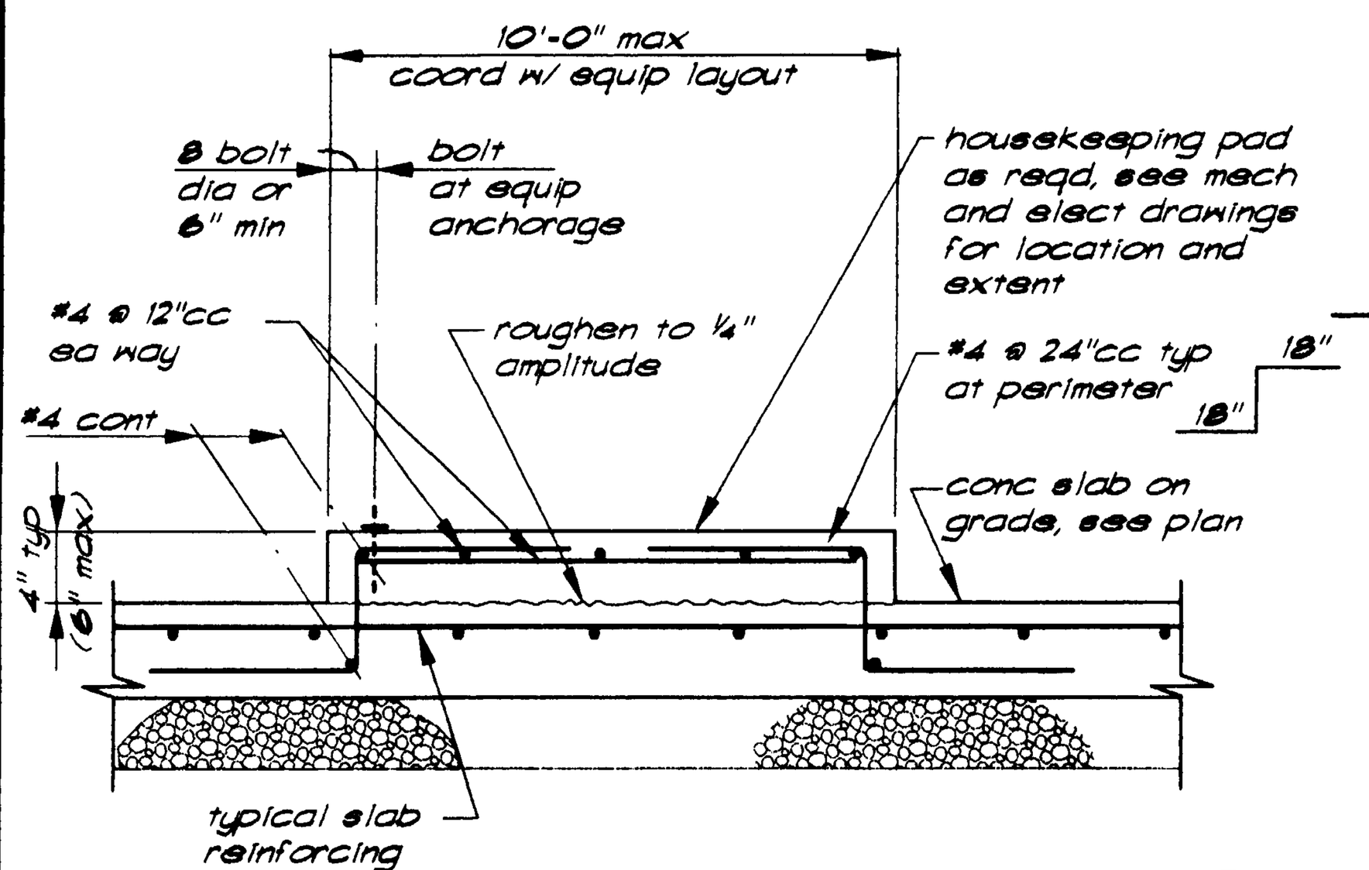
330S018-12



Notes:
1. Extent of ties shall be wherever the wall is terminated as shown above at both sides of the wall segment.
2. Blockouts in walls where cell is not fully grouted shall be considered as openings.
3. Column reinforcing ties are required at all wall sections whose length is 24" or less @ 8" walls, 30" or less @ 10" walls, and 36" or less @ 12" walls.

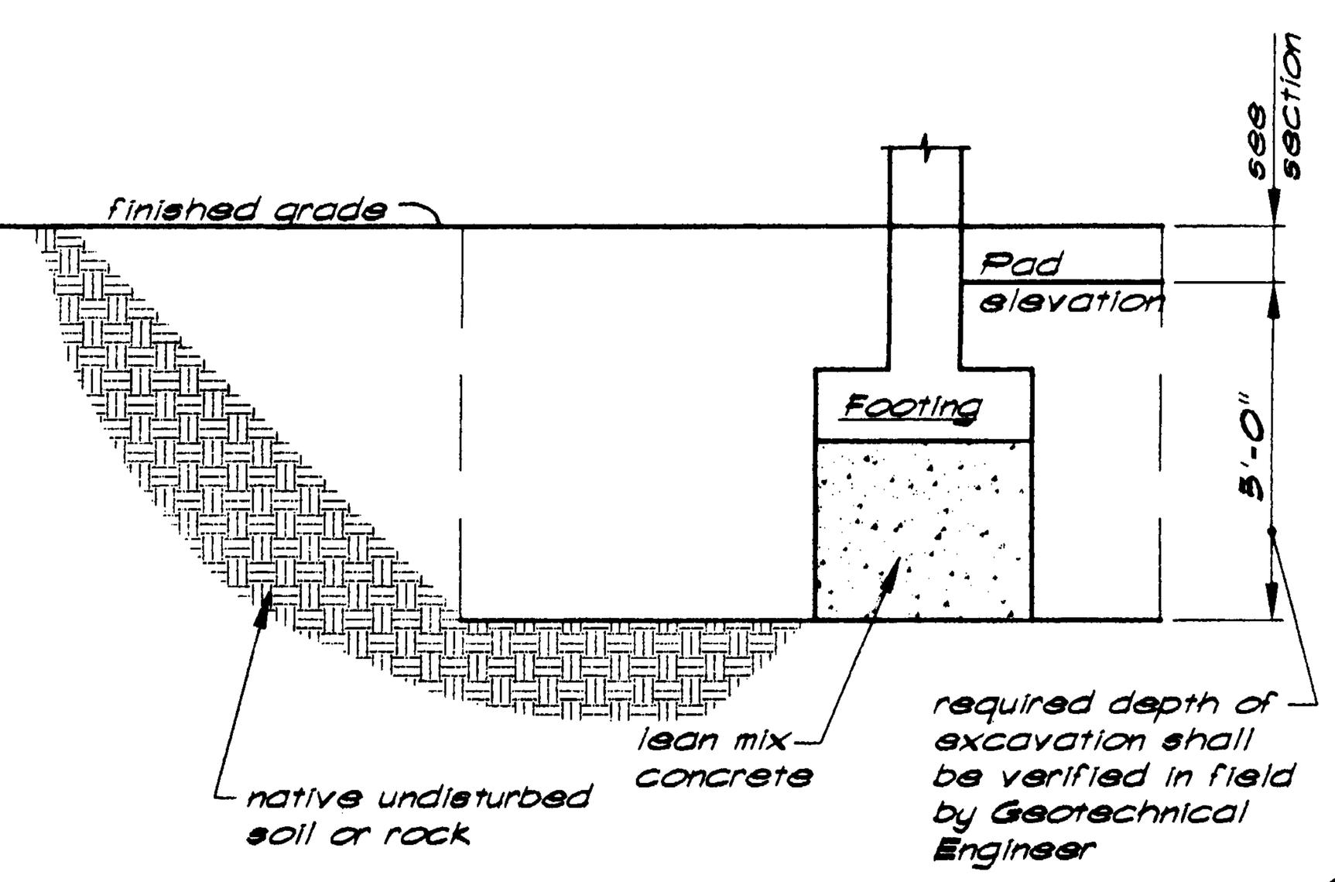
CMU Column Detail (21/S0.2)

420S006-12



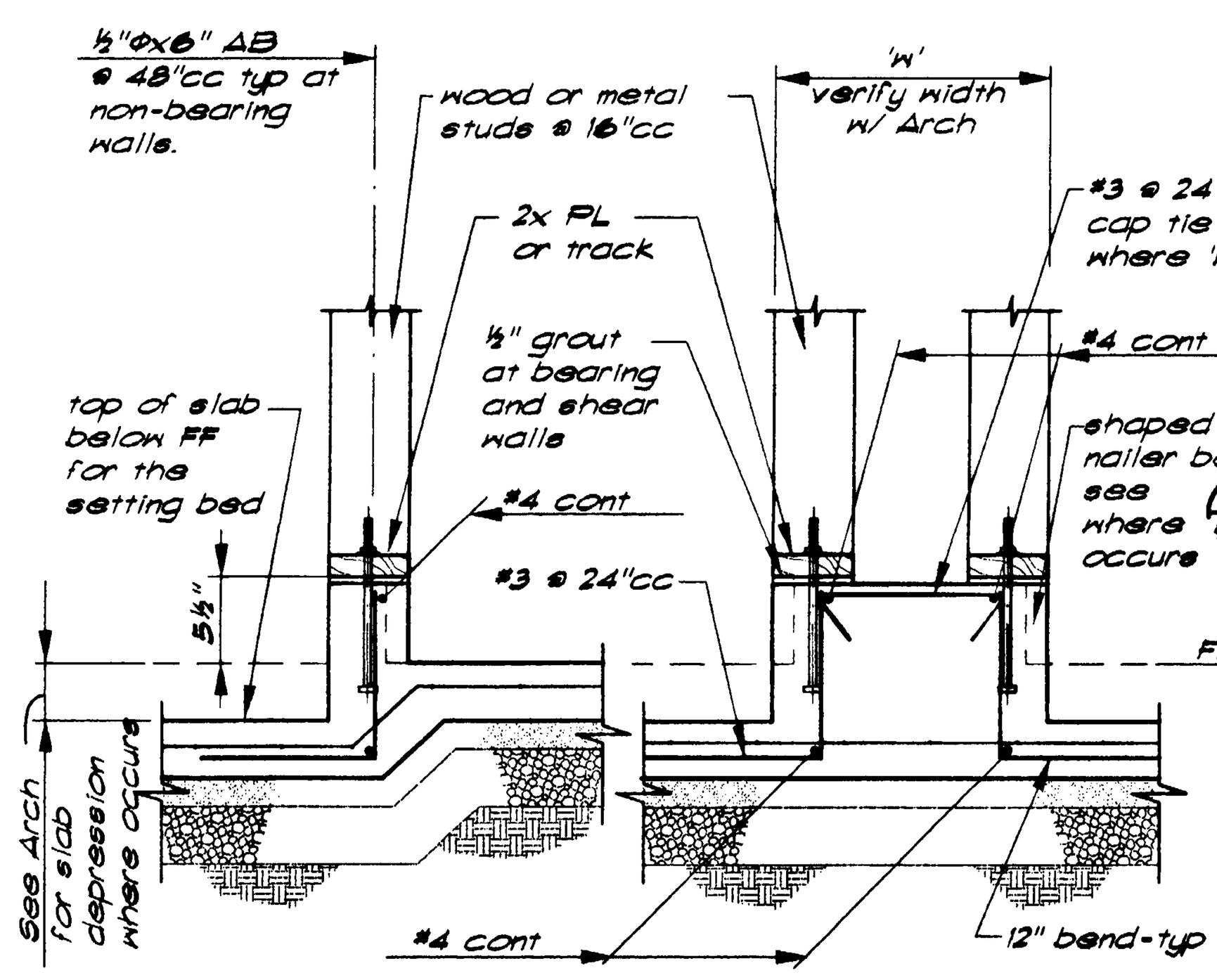
Typical Housekeeping Pad at Slab on Grade (12/S0.2)

330S017-16



Engineered Fill Section (13/S0.2)

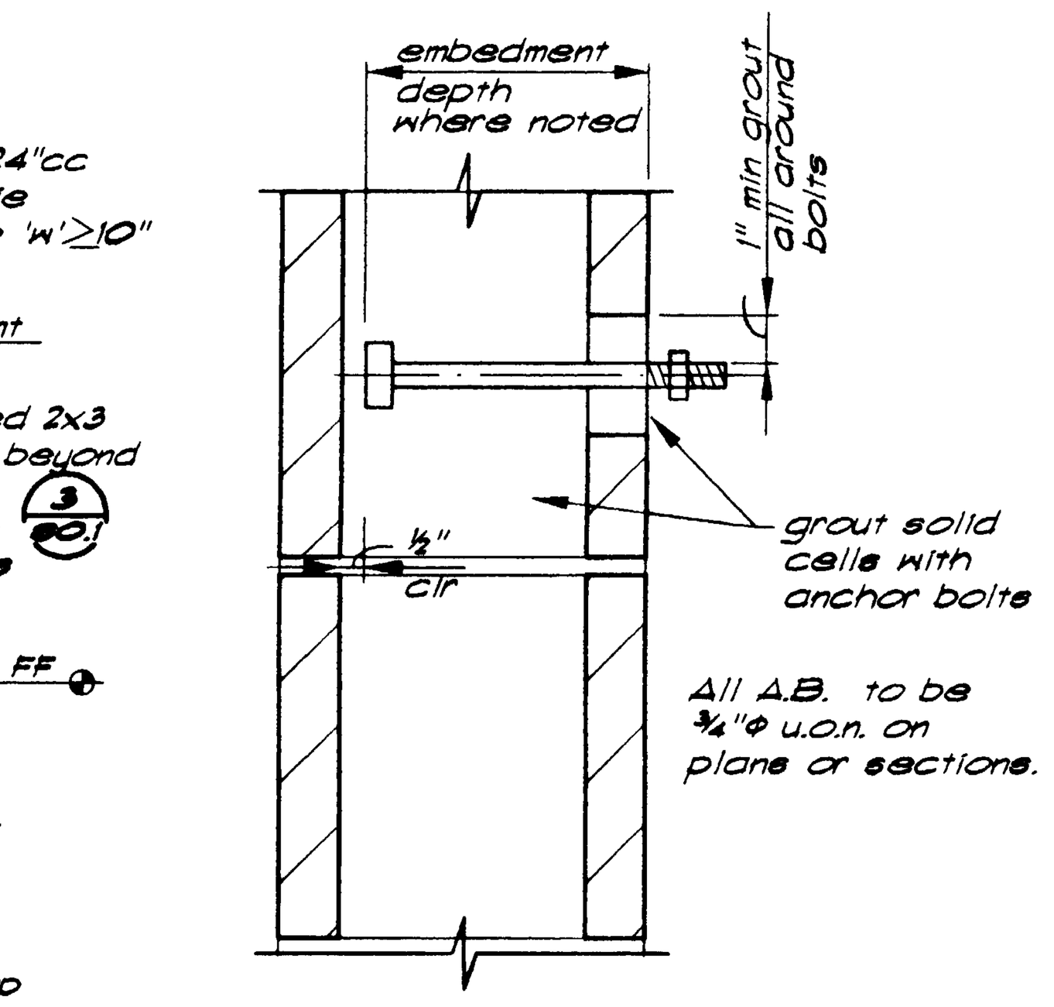
330S013-32



Typical Curb (14/S0.2)

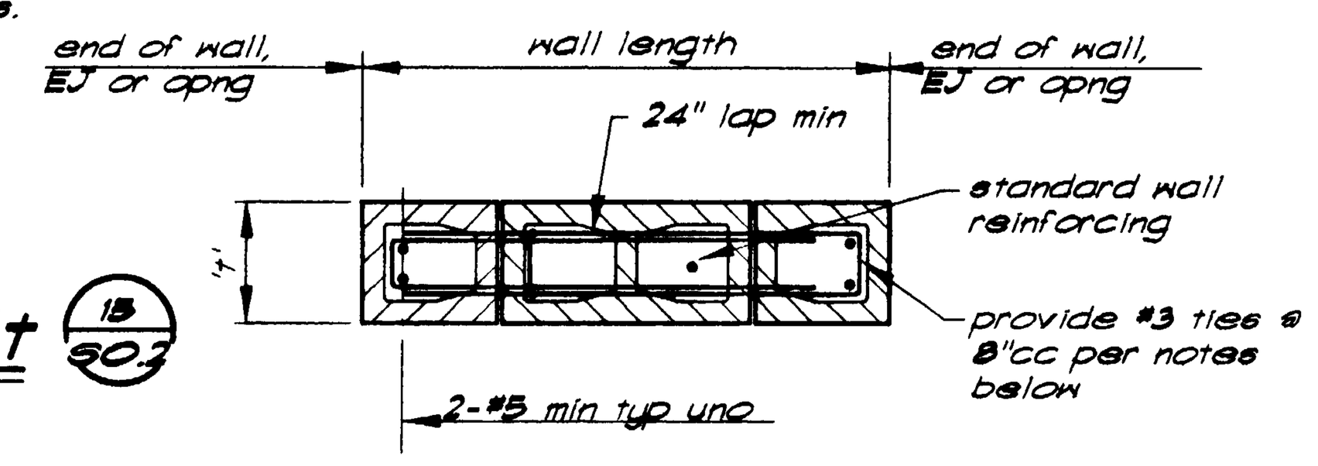
At slab depression and double wall

330S012-12



Typical Anchor Bolt in Conc Block (15/S0.2)

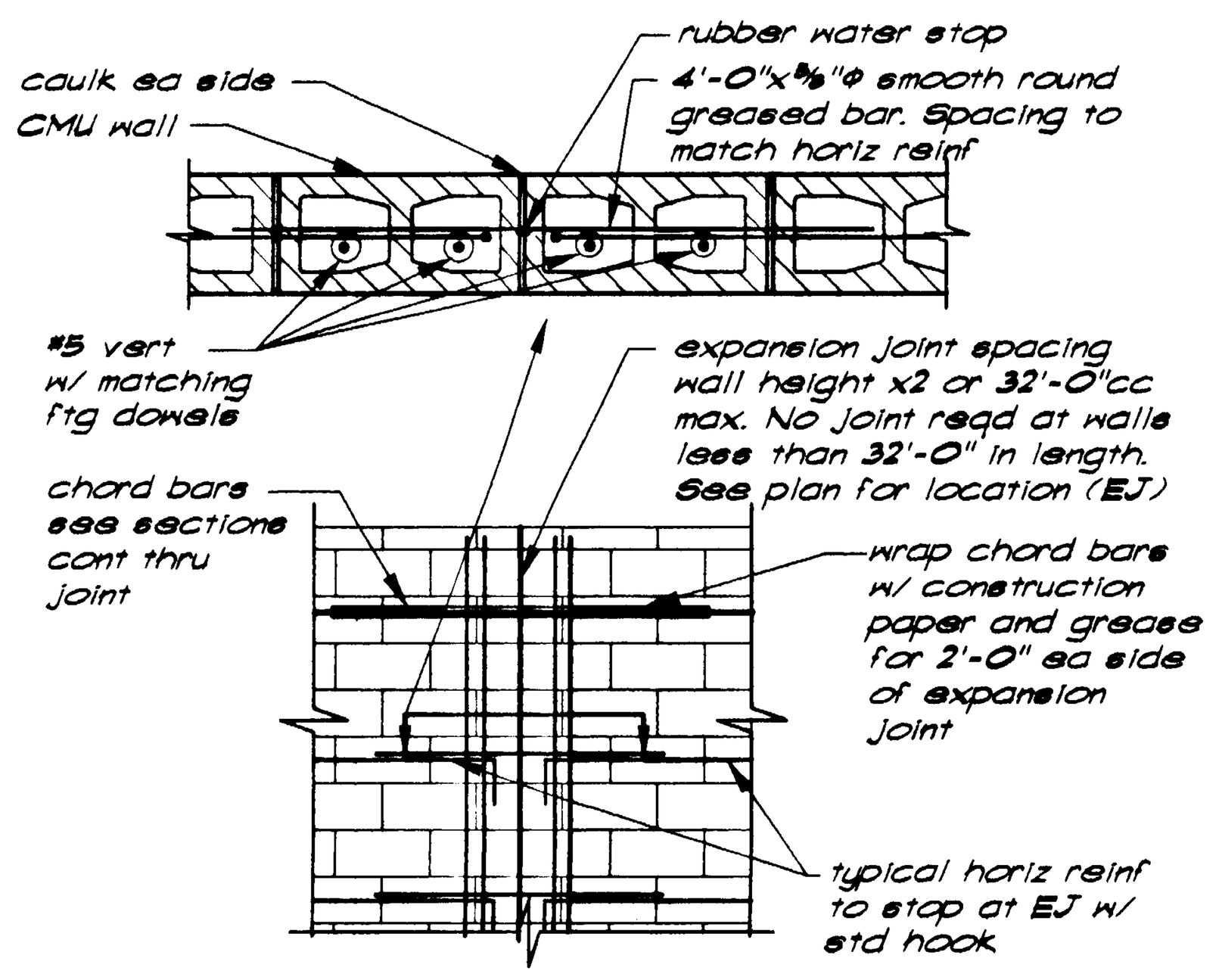
420S011-4



Notes:
1. Extent of ties shall be wherever the wall is terminated as shown above at both sides of the wall segment
2. Blockouts in walls where cell is not fully grouted shall be considered as openings.
3. Pier reinforcing ties are required at all wall sections whose length is from 3't' to 5't' or where height of wall segment being considered is greater than twice the wall length

CMU Pier Detail (20/S0.2)

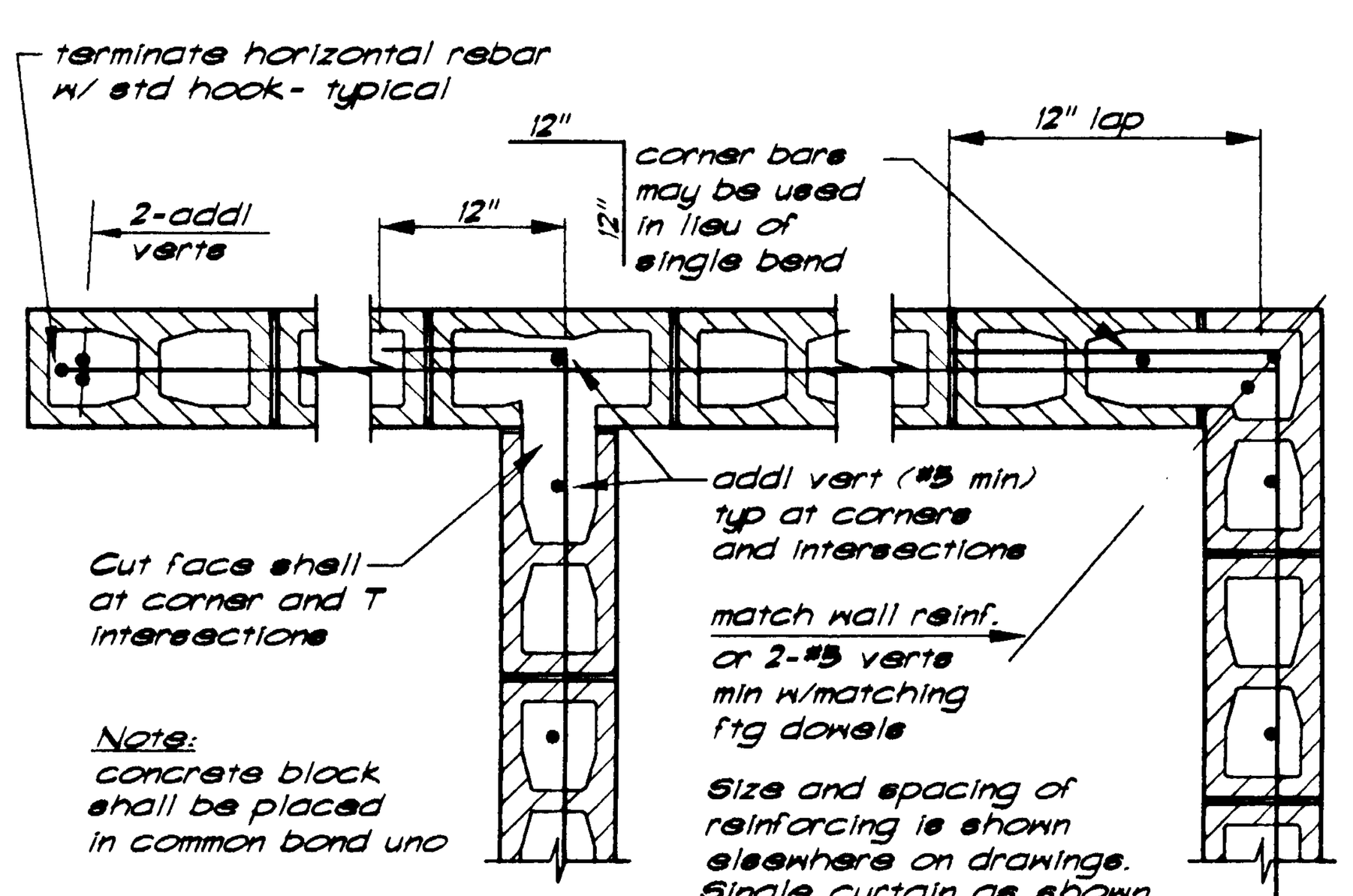
420S005-12



Note:
1) Do not splice chord bars within 4'-0" of expansion joint.
2) Place no joints within 2'-0" of any door or window openings.

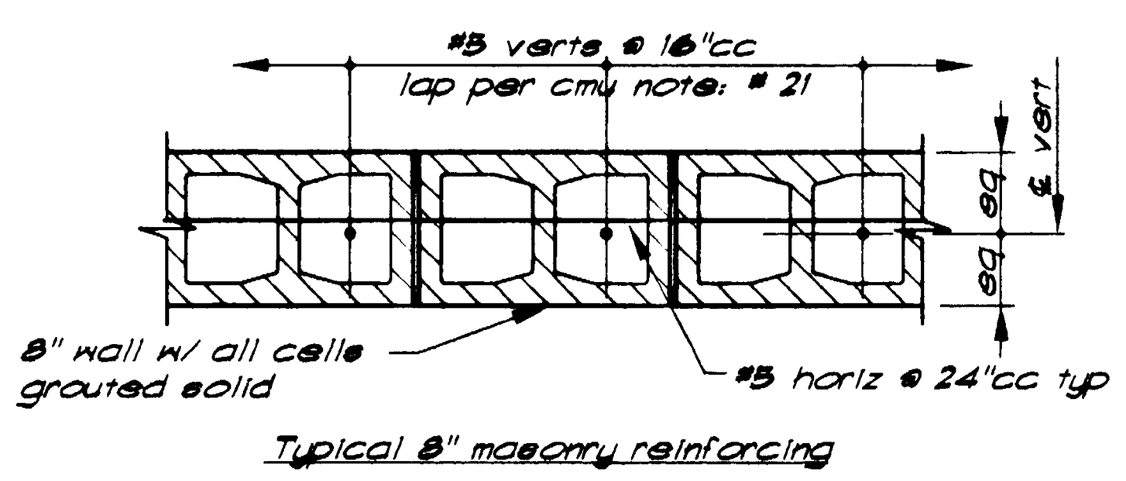
Typical Block Wall Expansion Joint (16/S0.2)

420S004-12



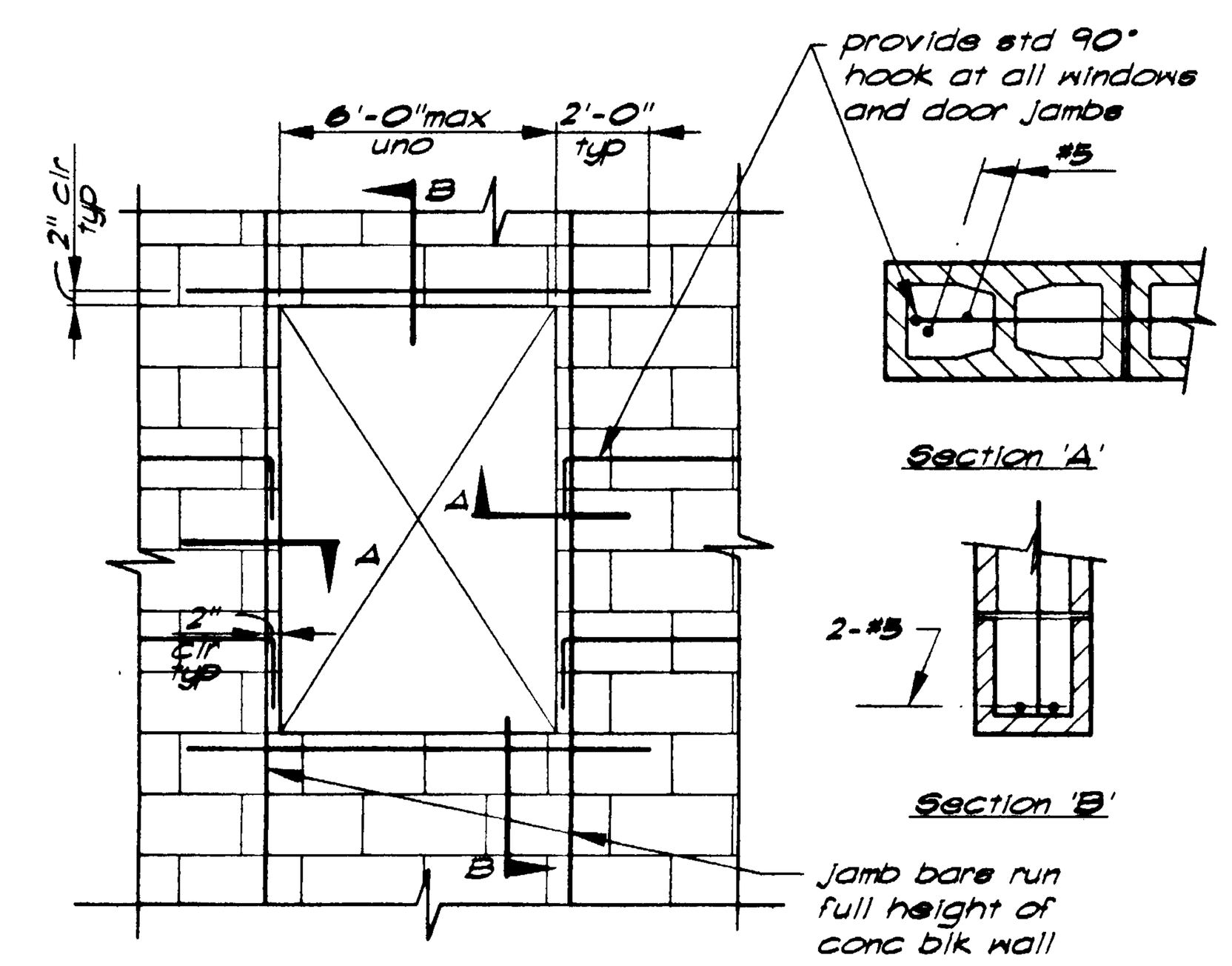
Typical Block Wall Reinforcing at Corners and Intersections (17/S0.2)

420S002-12



Typical Block Wall Reinforcing (18/S0.2)

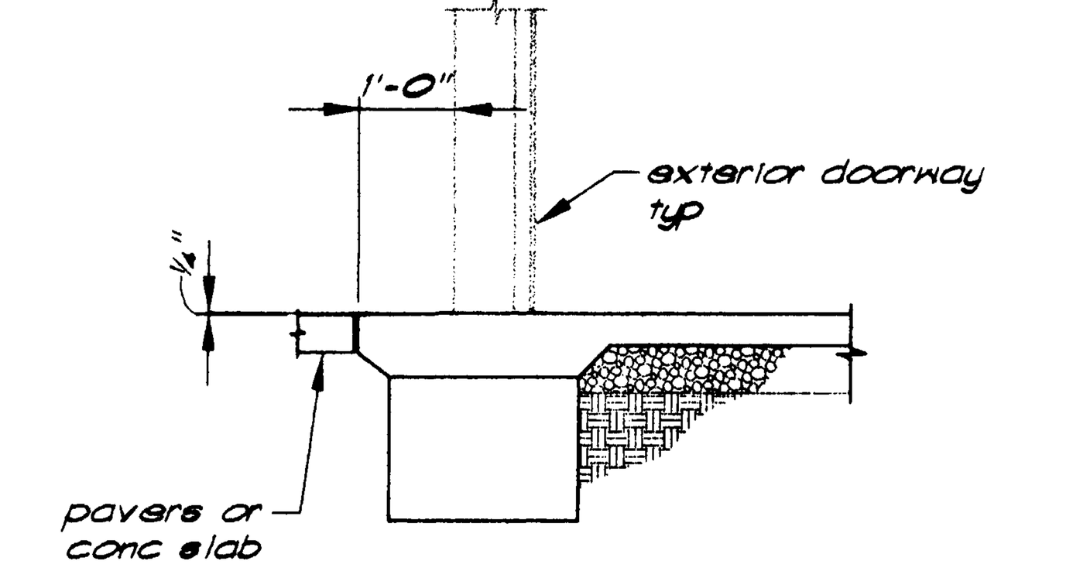
420S003-12



Note:
Place 2-#5 bars ea side top and bottom of all openings.
Top & bottom bars shall not be spliced.

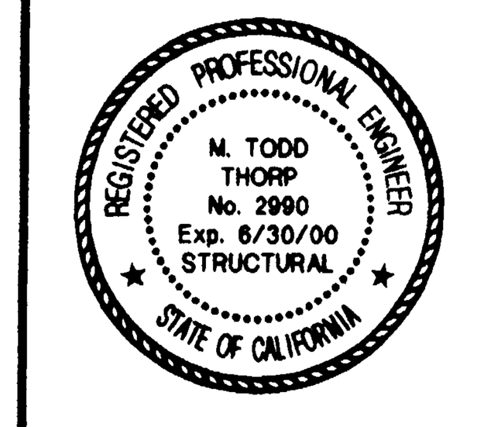
Opening Reinforcing at CMU Wall Openings (19/S0.2)

420S001-12



Typical Sill @ Ext. Doors (21/S0.2)

KEYNOTES



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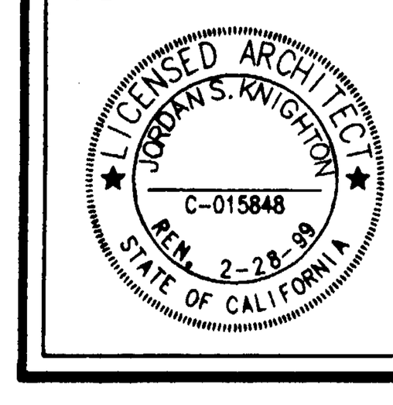
PROJECT
BALFOUR ROAD AQUATIC CENTER

DRAWING TITLE
TYPICAL DETAILS

SEAL



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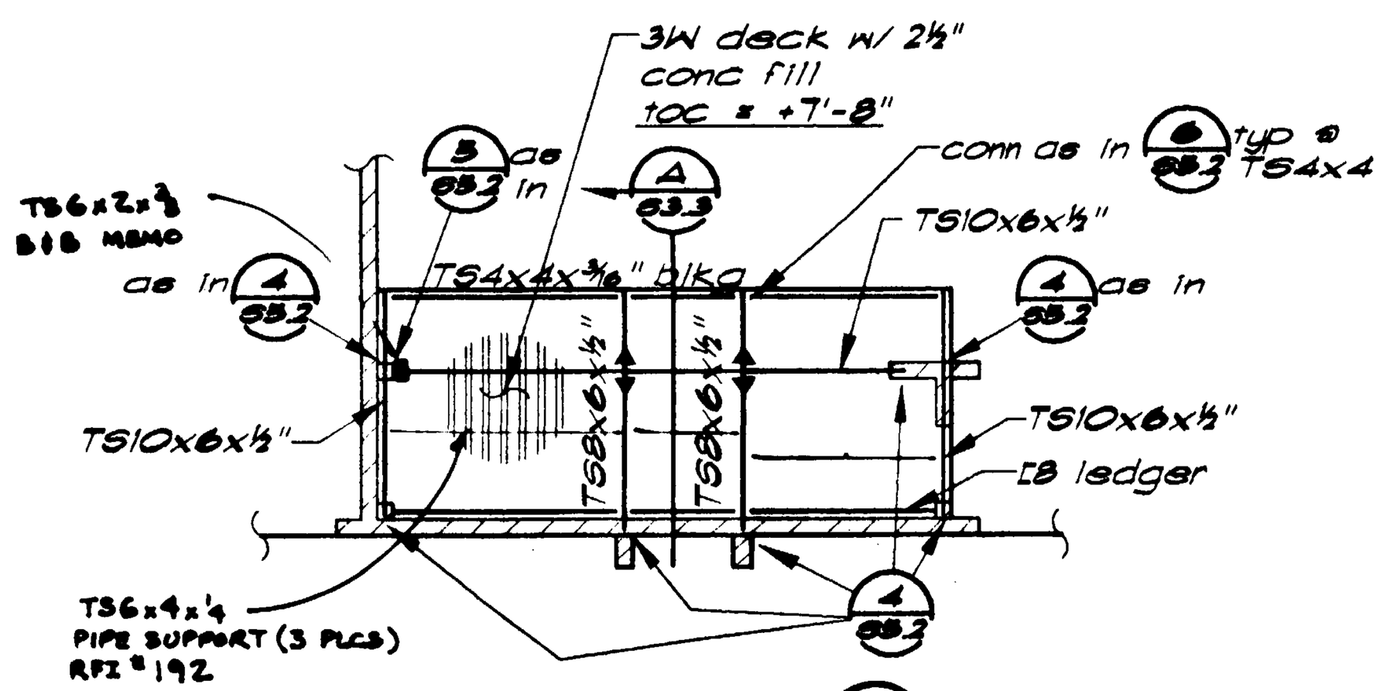
KEYNOTES

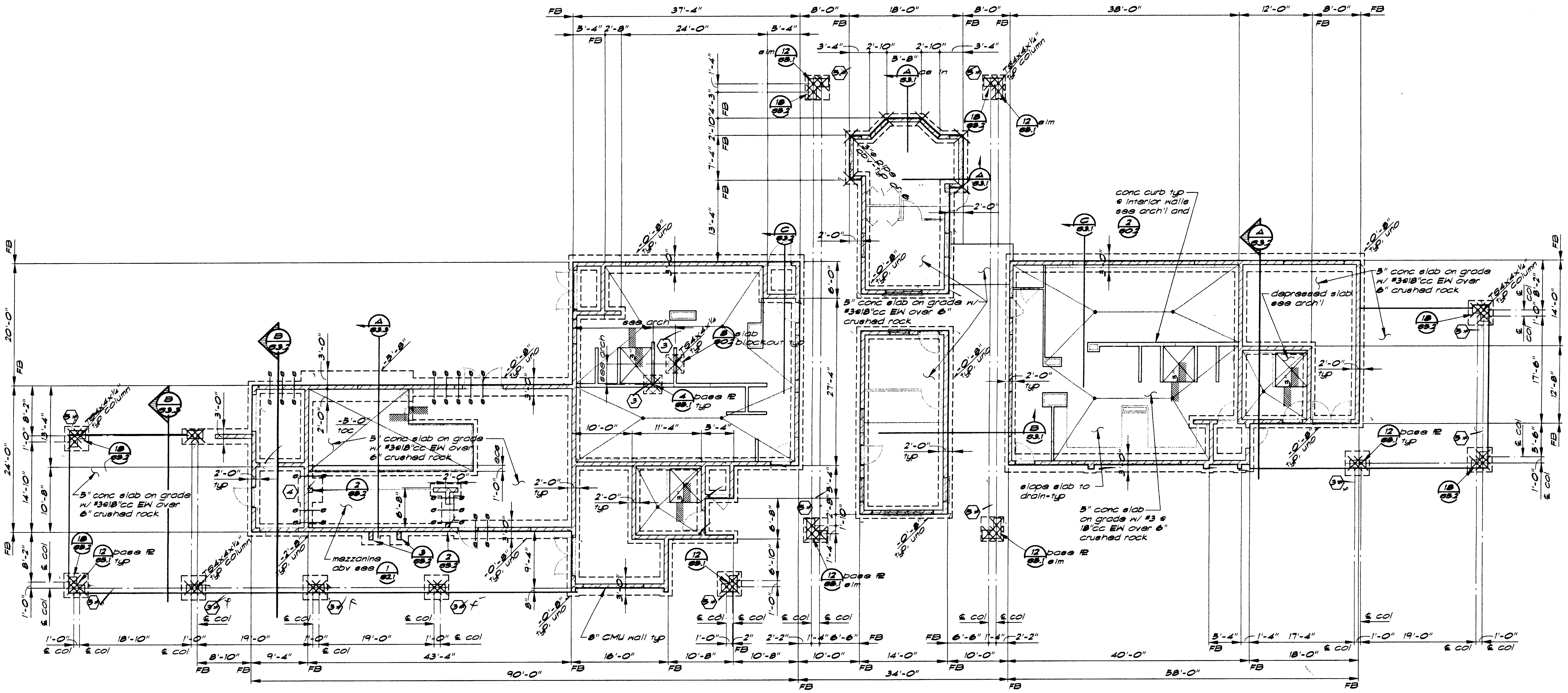


Mezzanine Framing (1/S2.1) — ⅛"=1'-0"

Footing Schedule (2/S2.1)

Type	Size	Depth	Reinforcement
3	3'-0"#	1'-6"	4-#5 ea way
4	4'-0"#	1'-6"	5-#5 ea way
5	5'-0"#	2'-0"	6-#5 ea way

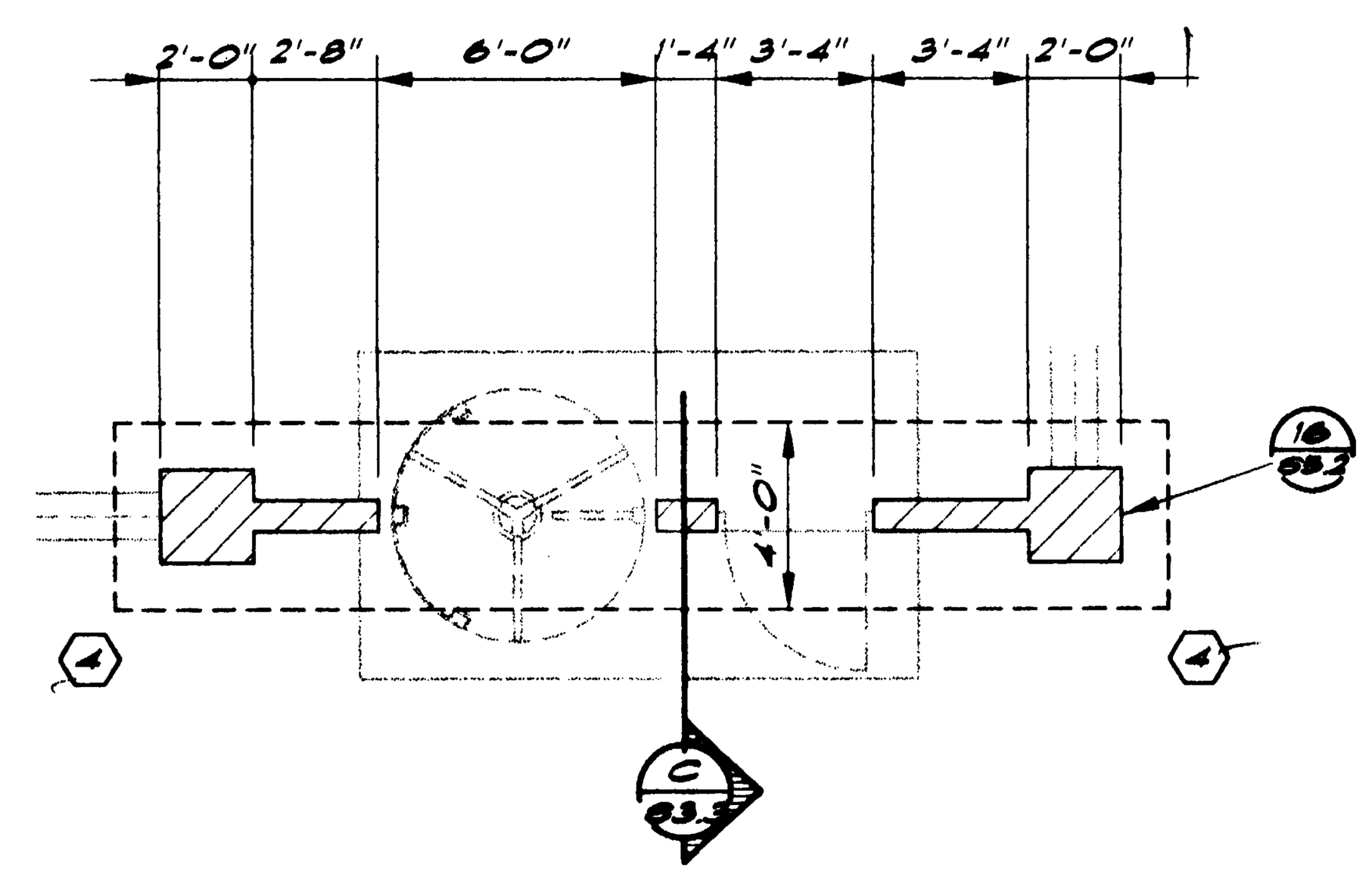
MK* indicates reinforcing top and bottom



Foundation Plan — ⅛"=1'-0"

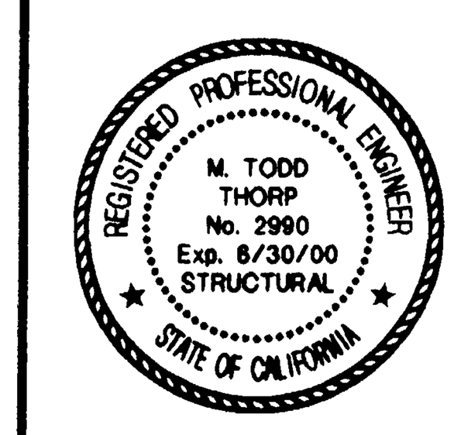
Foundation Plan Notes

1. Prepare building pad in accordance w/ Soils Report #3347-3-99 by Joseph M. Provenzano, P.E. The soils engineer shall be retained to provide observation and testing services during the grading and foundation phase of construction per soil report recommendations. Inspection and testing reports shall be submitted to the Building Dept.
2. [hatch] - indicates 8" CMU wall - typ. See 18/S0.2 for reinf. See archl for coursing and location of 4" block. AT step in course bars shall be bent.
3. X indicates TS column typ. See plan for column size. For base PL detail see S5.1.
4. -0'-8" indicates top of footing elevation (-0'-8" typ u.n.o.)
5. See arch for block layout
6. MK indicates pad footing per schedule this sheet.
7. See Arch'l drwgs for exact location of doors, windows, curbs, depressed slabs, drains & like items.
8. [X box] indicates depressed slab area.
9. "pier" indicates special tie reinforcing req'd @ windows & door jambs, see 20/S0.2.
10. See 19/S0.2 for opening reinforcment @ windows & door jambs.
11. Provide slab on grade control joints (c.j.) as req'd by detail 1/S0.2
12. See 17/S0.2 for corner & intersection reinforcing.



Egress Gate-Foundation Plan — ¼"=1'-0"

Note: See Arch Site Plan for location.



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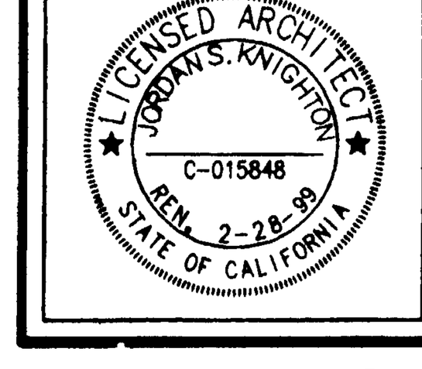
NO.	DATE	REVISION COMMENTS			

PROJECT
BALFOUR ROAD AQUATIC CENTER

DRAWING TITLE
FOUNDATION PLAN

SEAL



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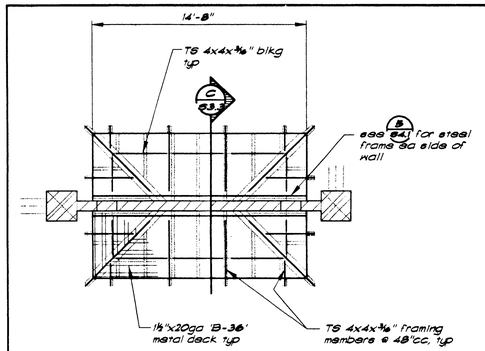
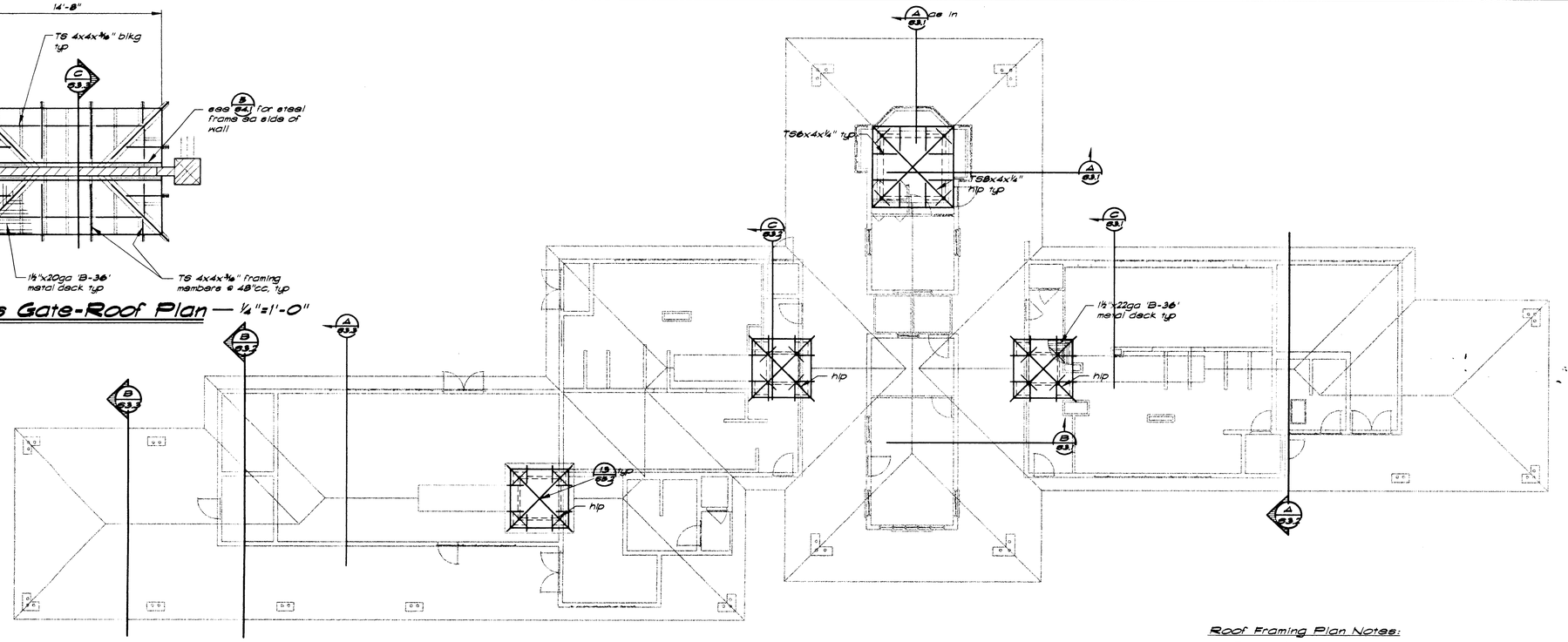
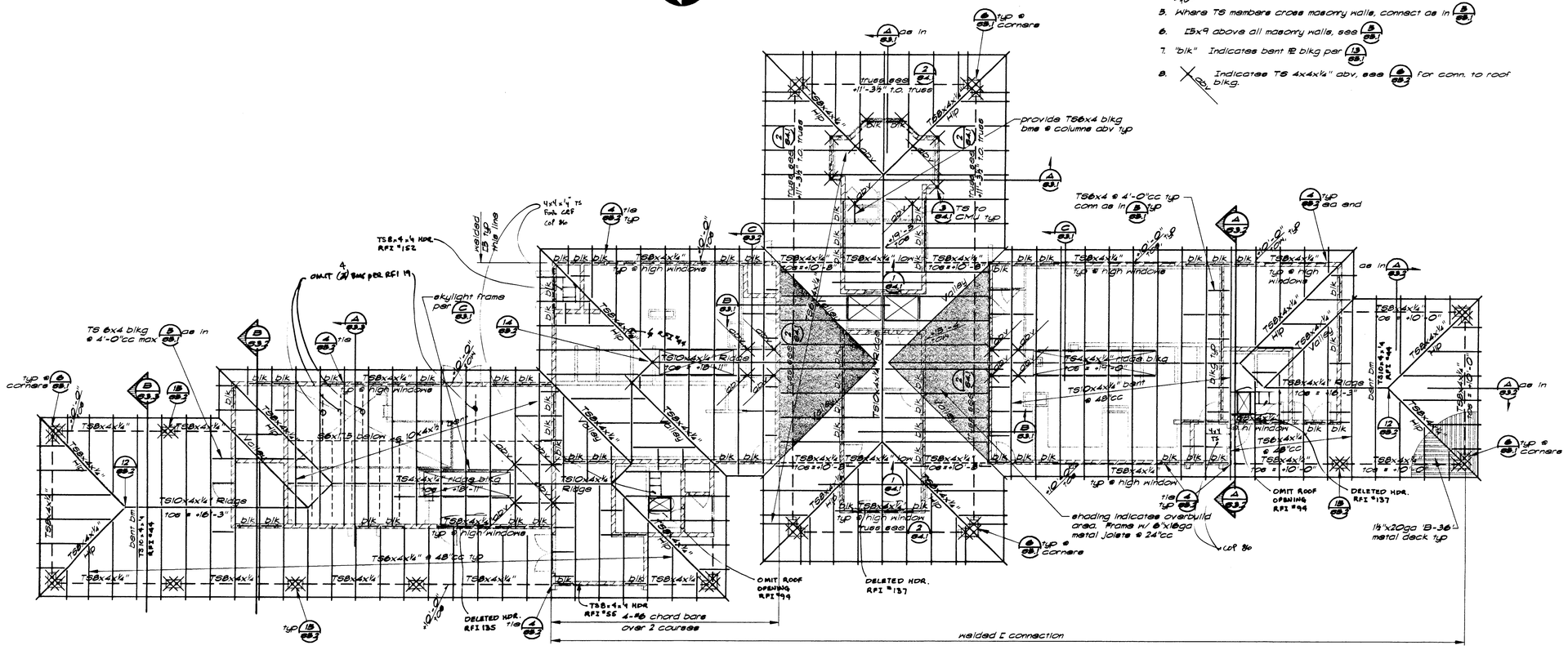


Egress Gate-Roof Plan — ¼"=1'-0"



High Roof Framing Plan — ⅛"=1'-0"



Roof Framing Plan — ⅛"=1'-0"

Roof Framing Plan Notes:

1. Typical decking shall be as shown on plan - see sheet S5.1 for additional information and deck attachments.
2. X Indicates TS column below. See foundation plan for size.
3. See sheet S5.1 and S5.2 for typical steel details, u.n.o.
4. 24'-11½" / 10'-8" Indicates top of steel elevation, u.n.o.
5. Where TS members cross masonry walls, connect as in B/S5.1
6. 15x9 above all masonry walls, see B/S5.1
7. "blk" Indicates bent 16 blkg per 19/S5.1
8. X abv Indicates TS 4x4x¼" abv, see A/S5.1 for conn. to roof blkg.

KEYNOTES

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PROJECT
BALFOUR ROAD AQUATIC CENTER

DRAWING TITLE
ROOF FRAMING PLANS

SEAL — LICENSED ARCHITECT — NORMAN S. KNIGHTON — C-015848 — EXPIRES 2-28-01 — STATE OF CALIFORNIA

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Structural
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Roof Framing Plans
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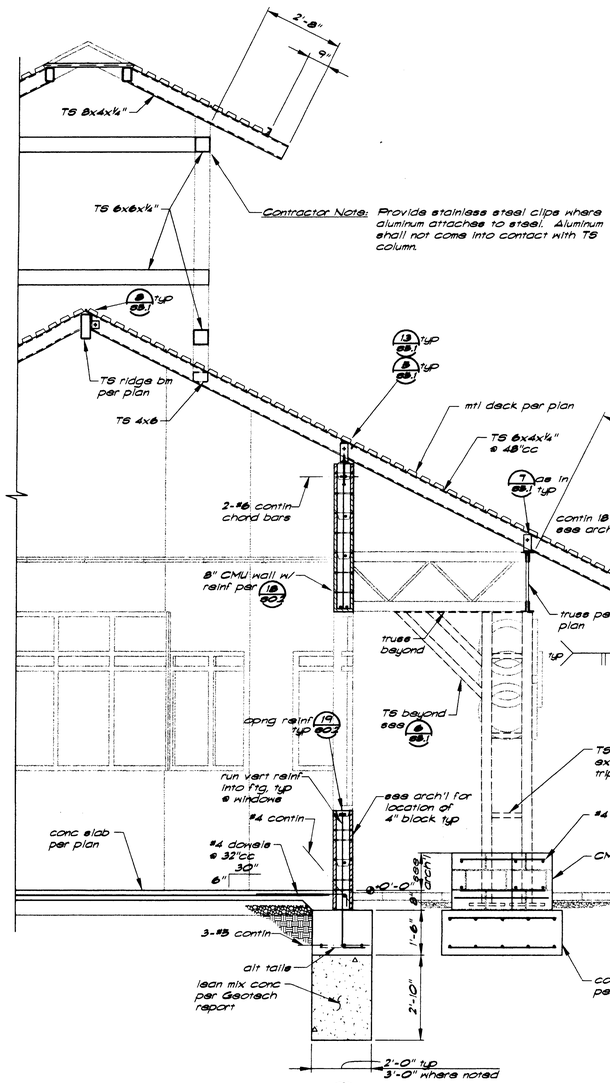
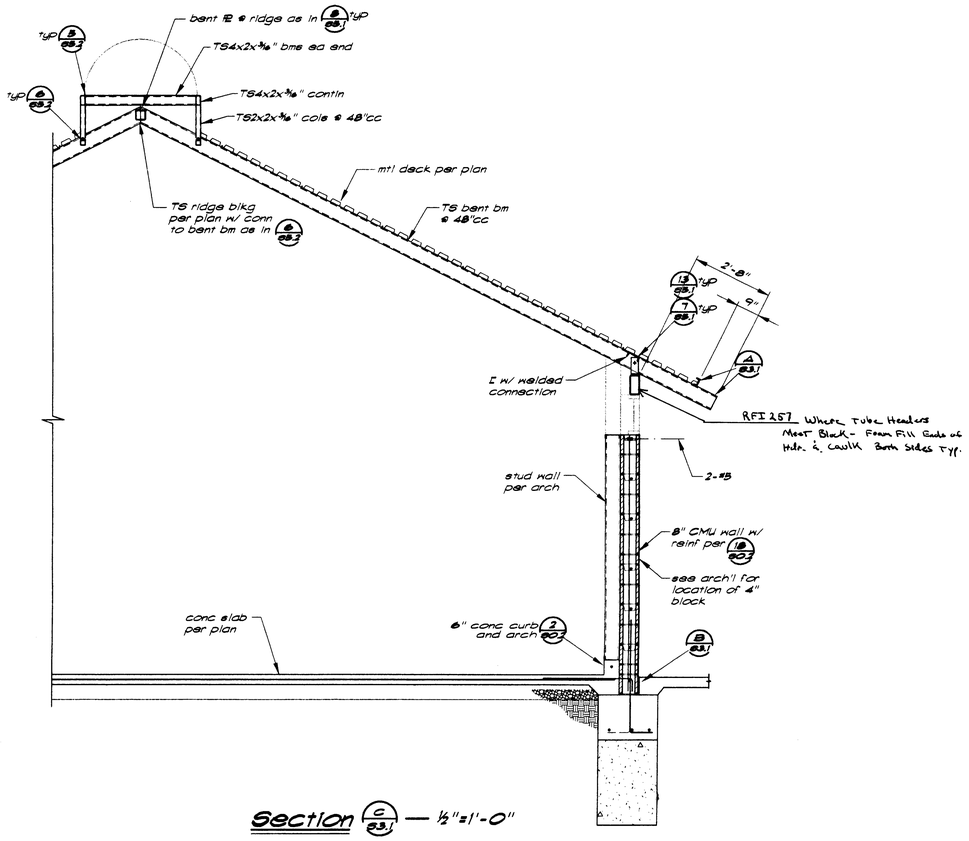
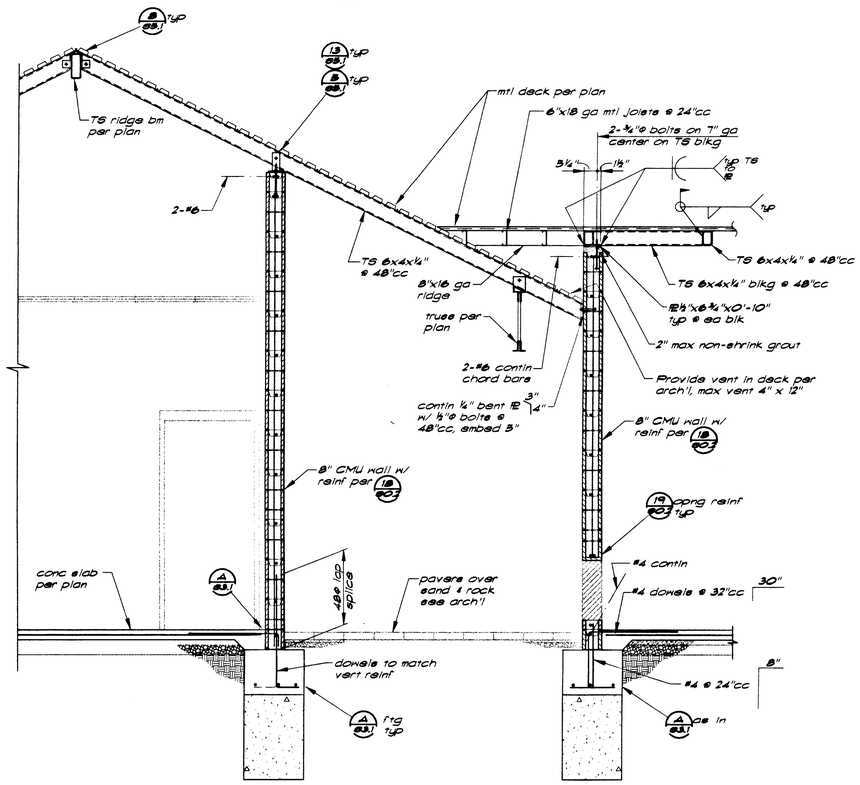


Section △/S3.1 — ½"=1'-0"



Section C/S3.1 — ½"=1'-0"



Section B/S3.1 — ½"=1'-0"

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PROJECT
BALFOUR ROAD AQUATIC CENTER

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C-015648
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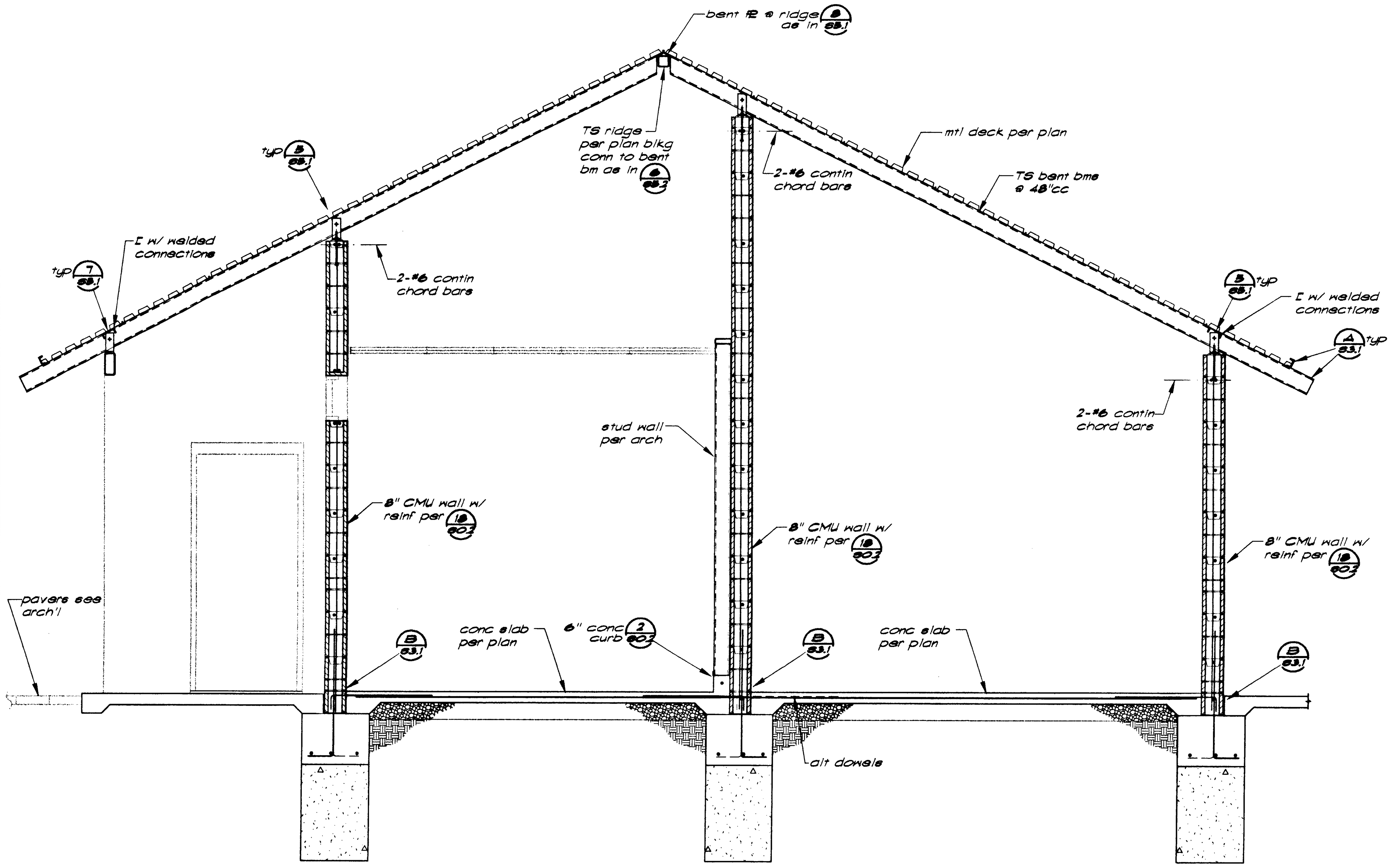
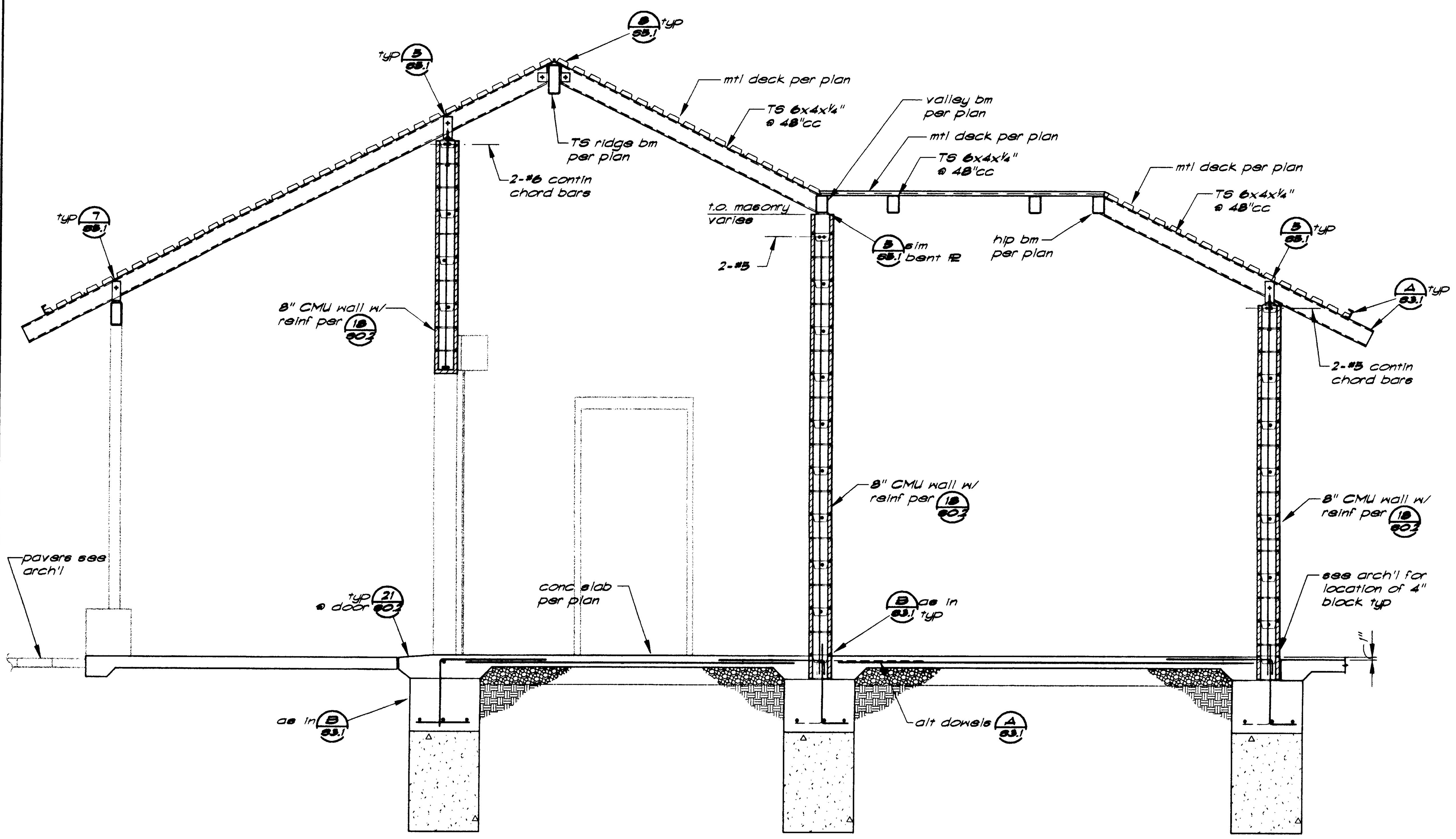
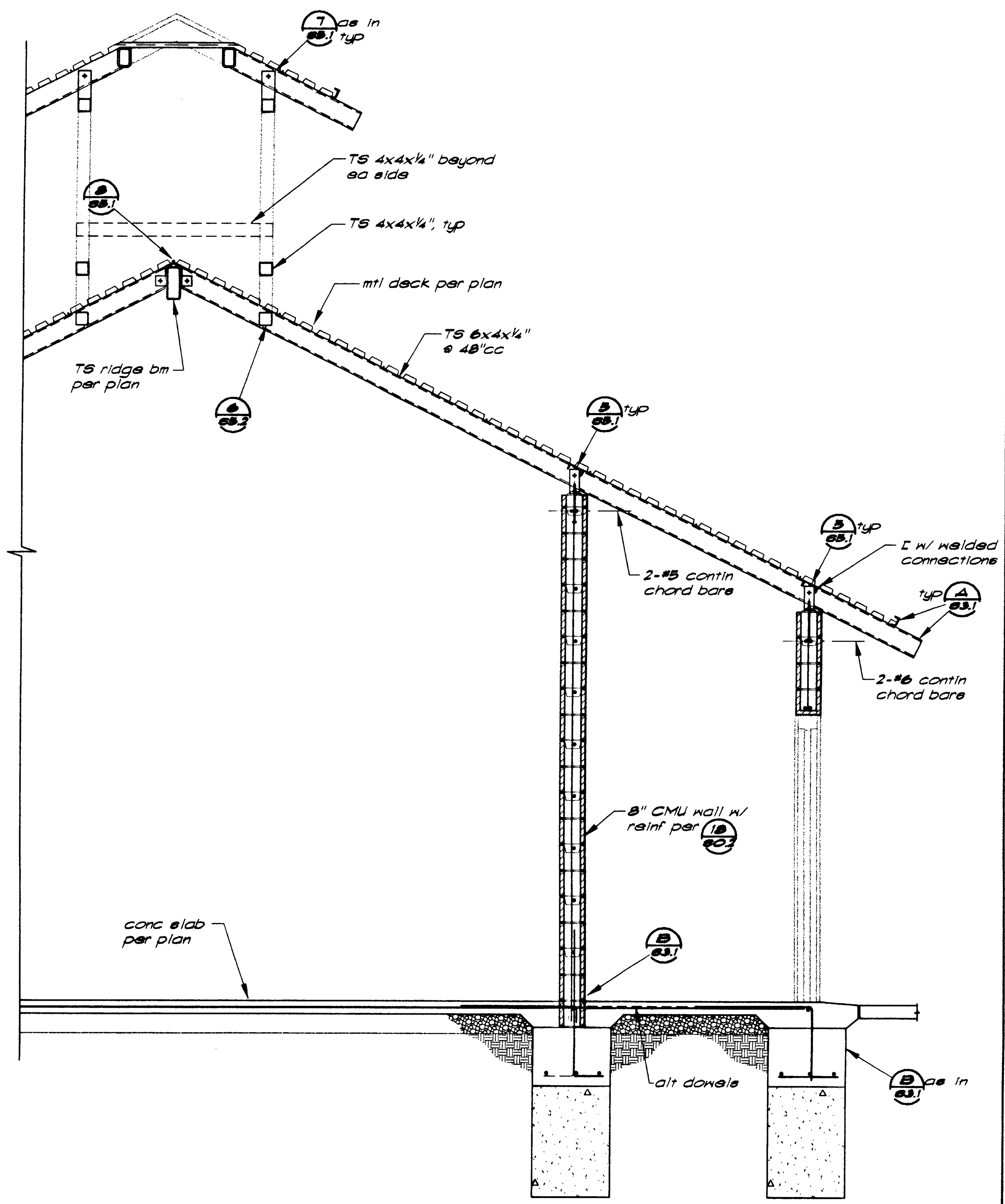


Section A/S3.2 — 1/2"=1'-0"



Section B/S3.2 — 1/2"=1'-0"



Section C/S3.2 — 1/2"=1'-0"

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C-015848
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Sections 2
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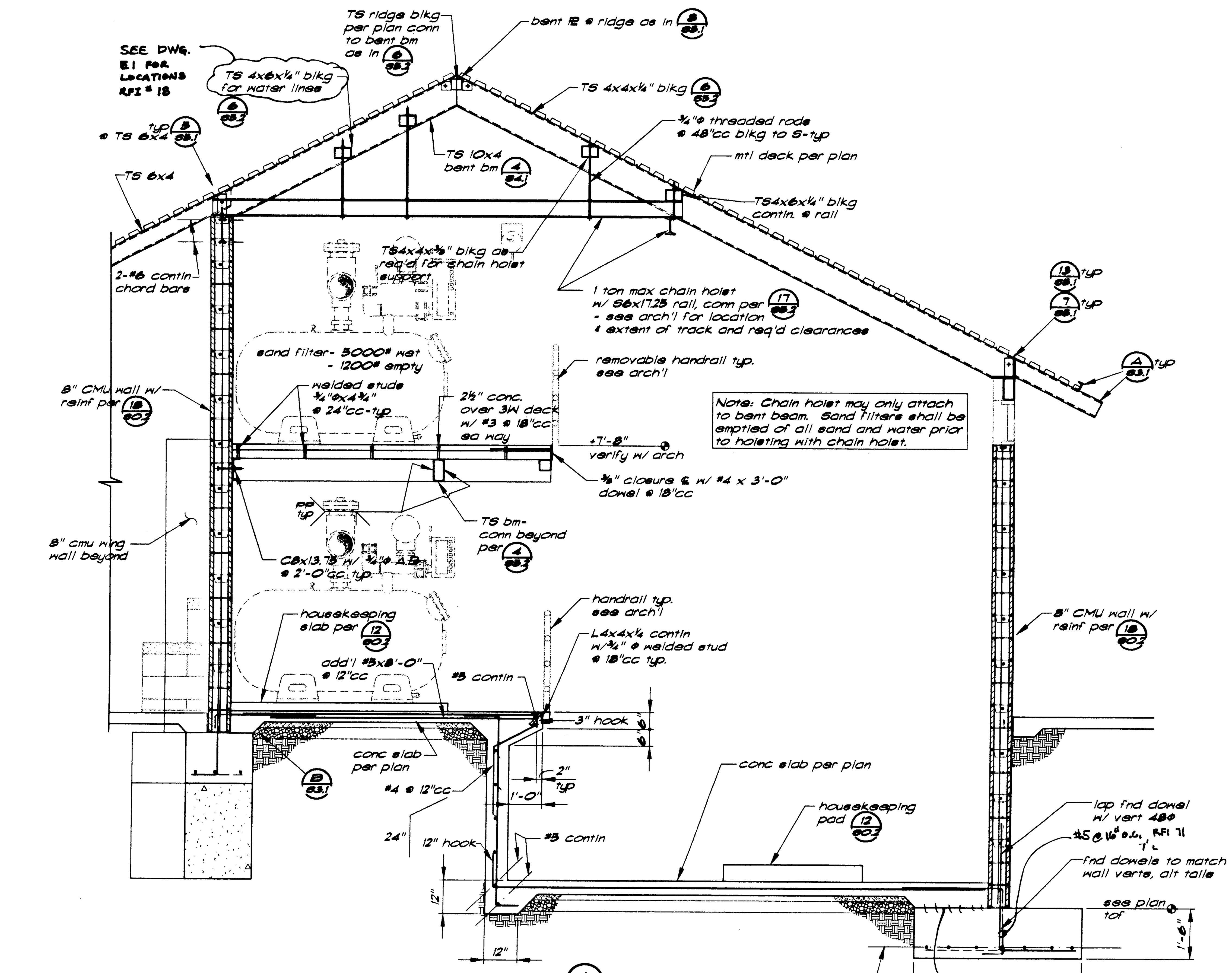
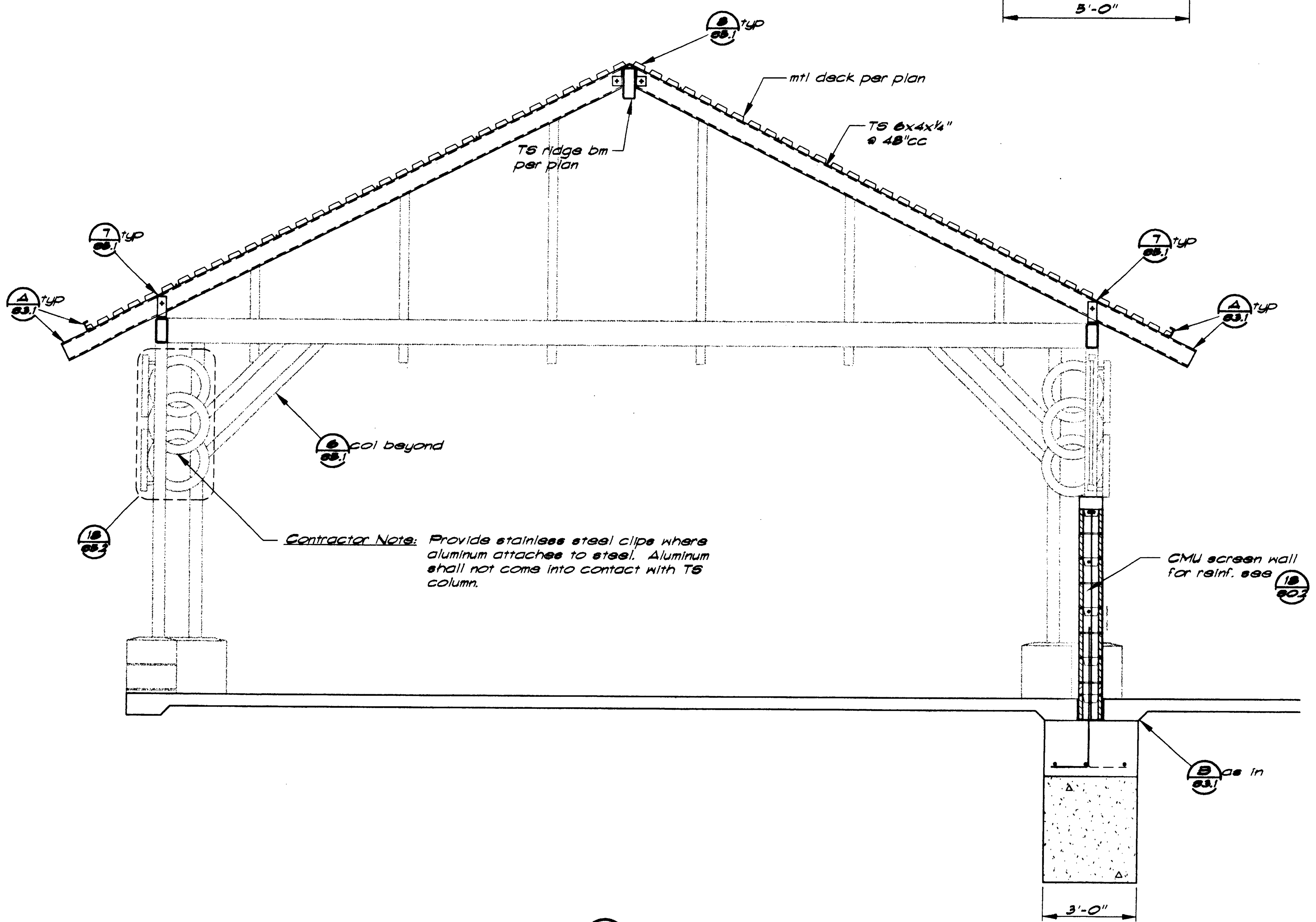
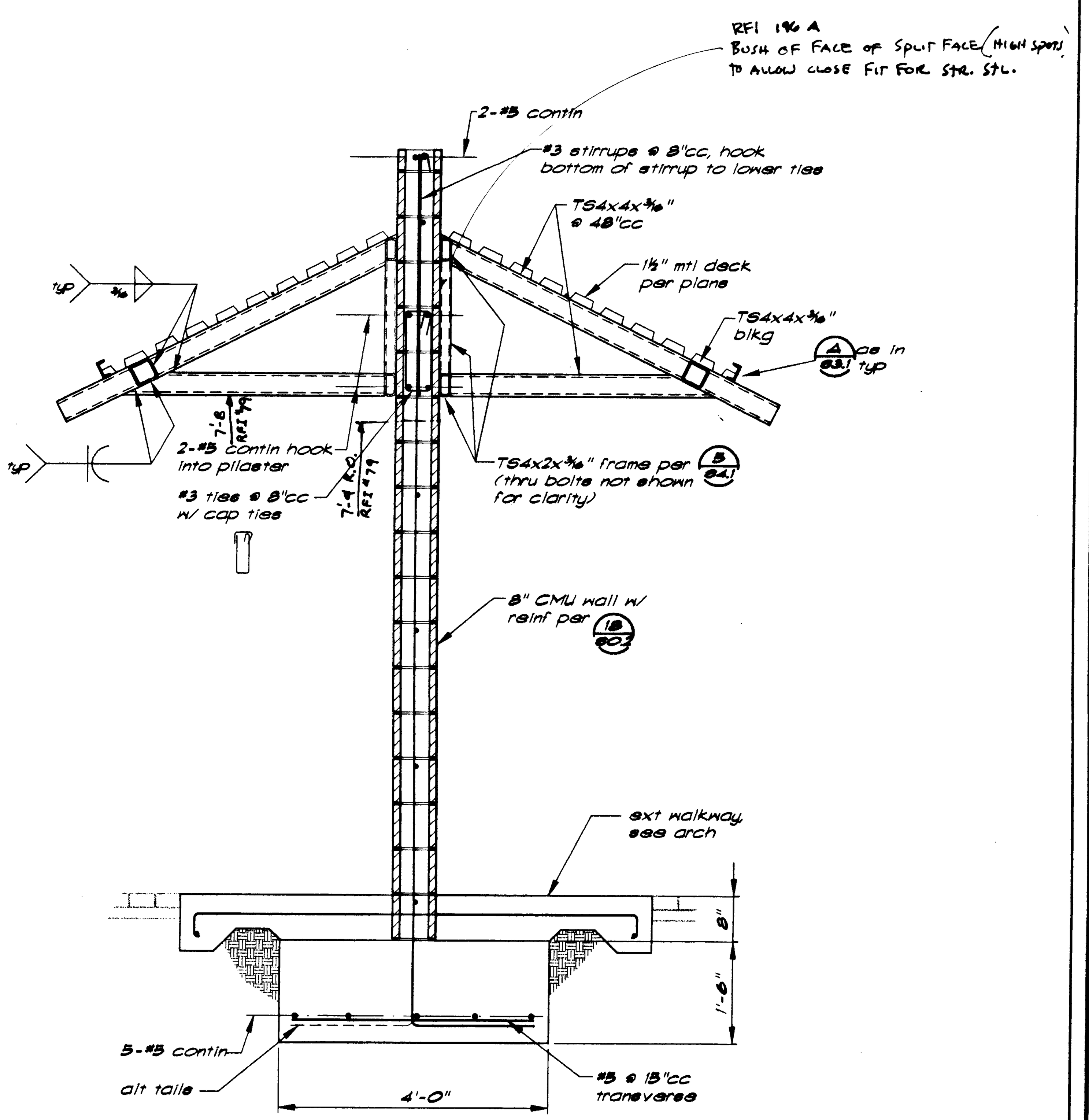


Section A/S3.3 — ½"=1'-0"



Section B/S3.3 — ½"=1'-0"



Section C/S3.3 — ¾"=1'-0"

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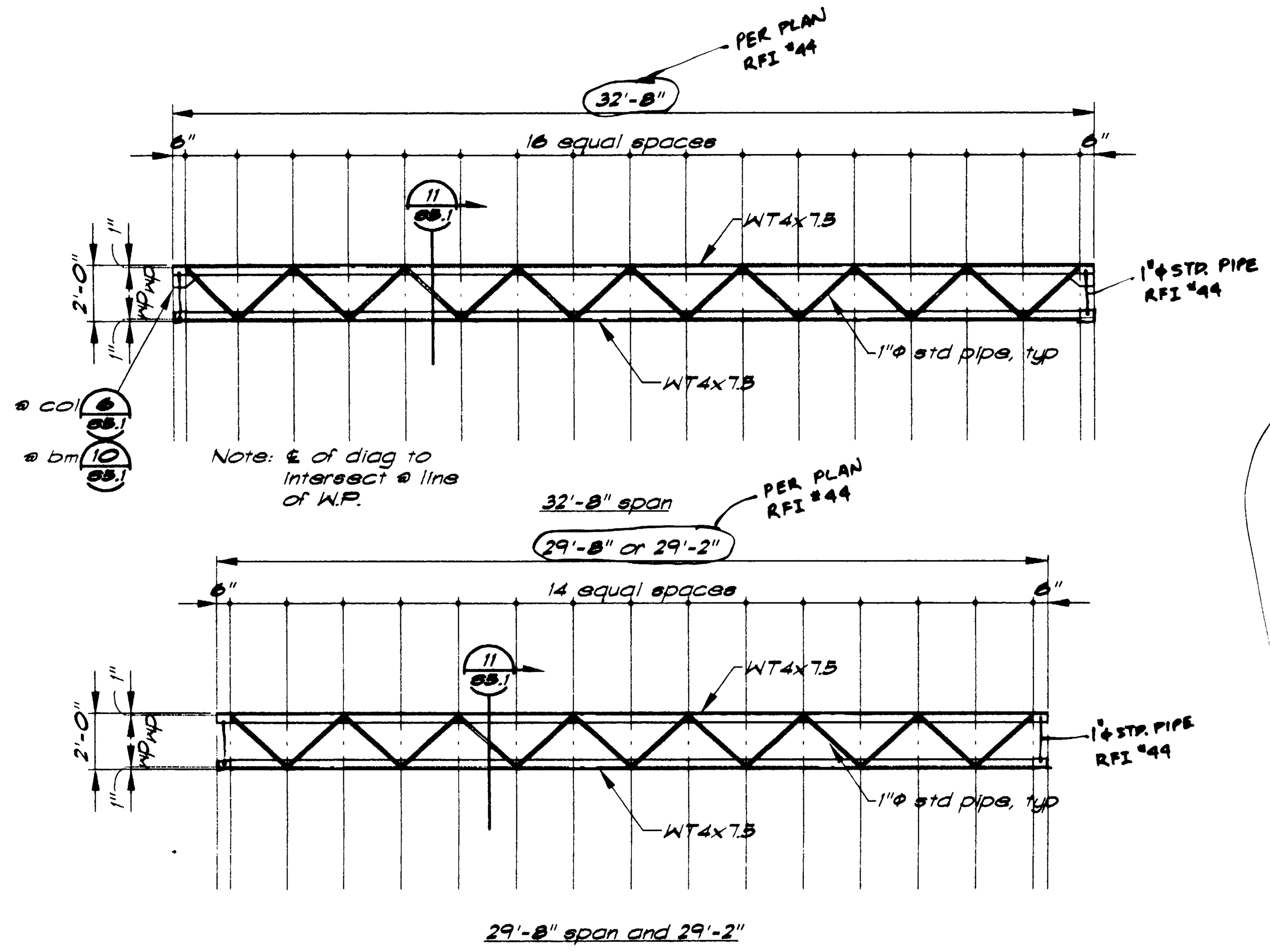
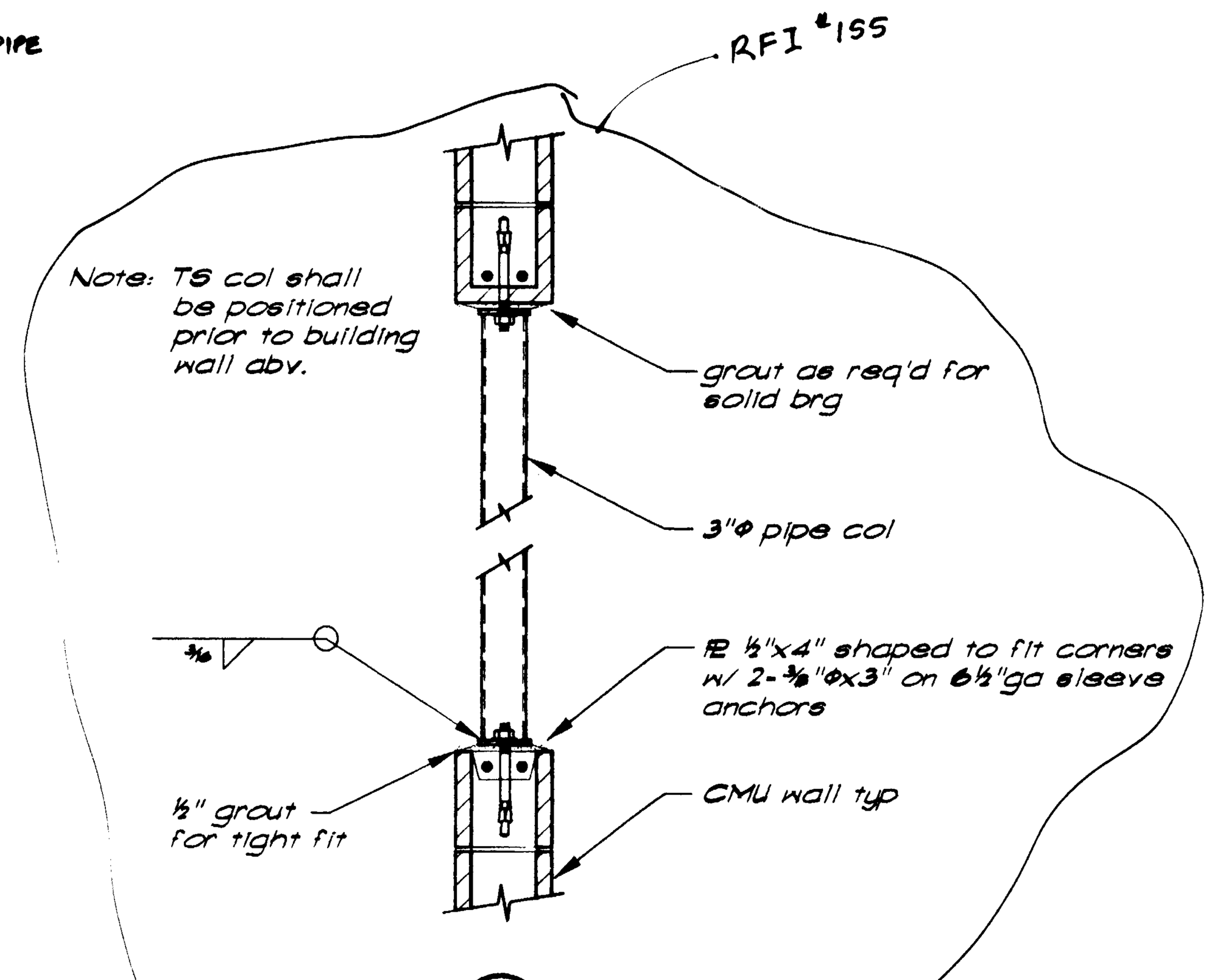
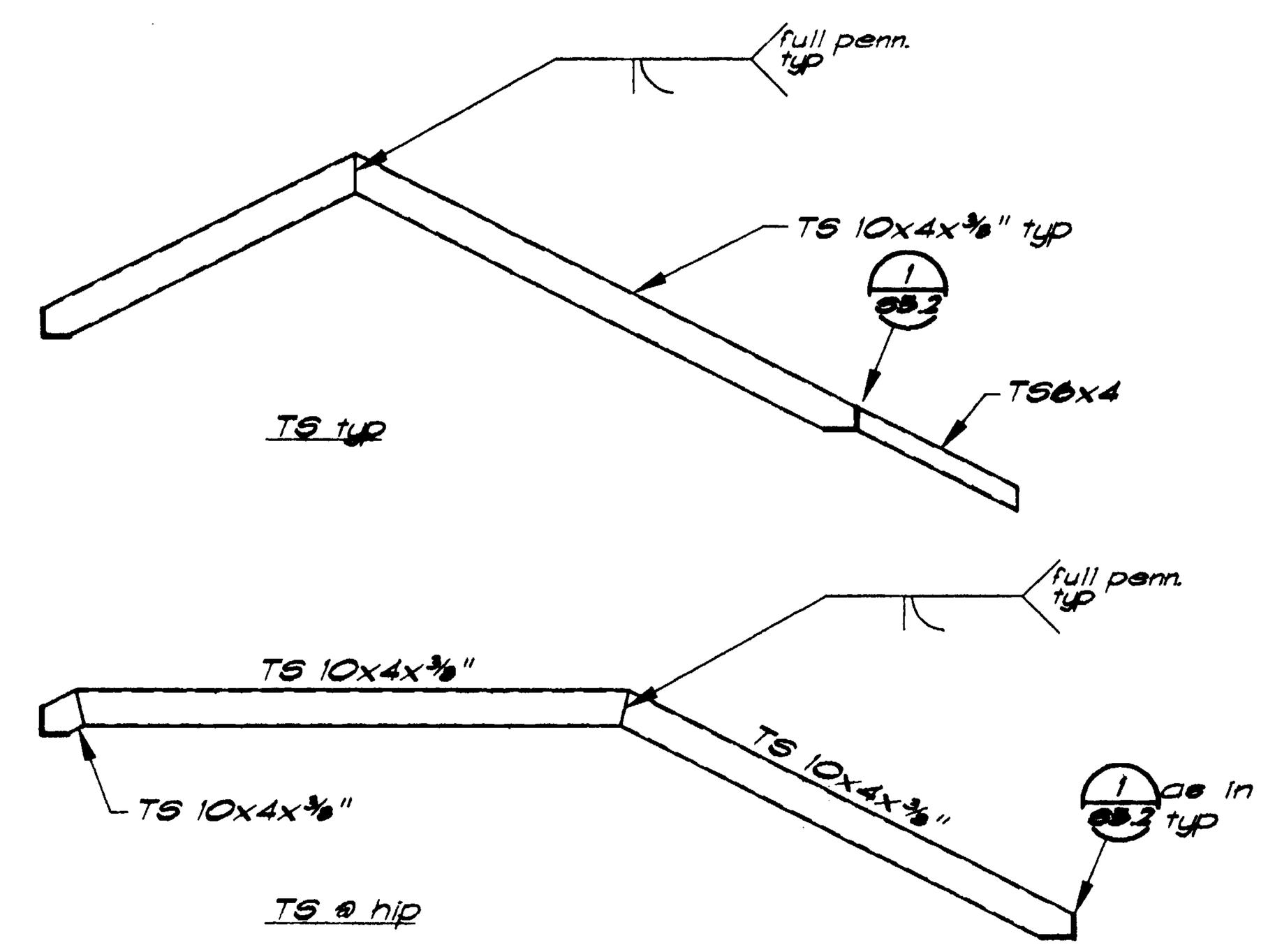


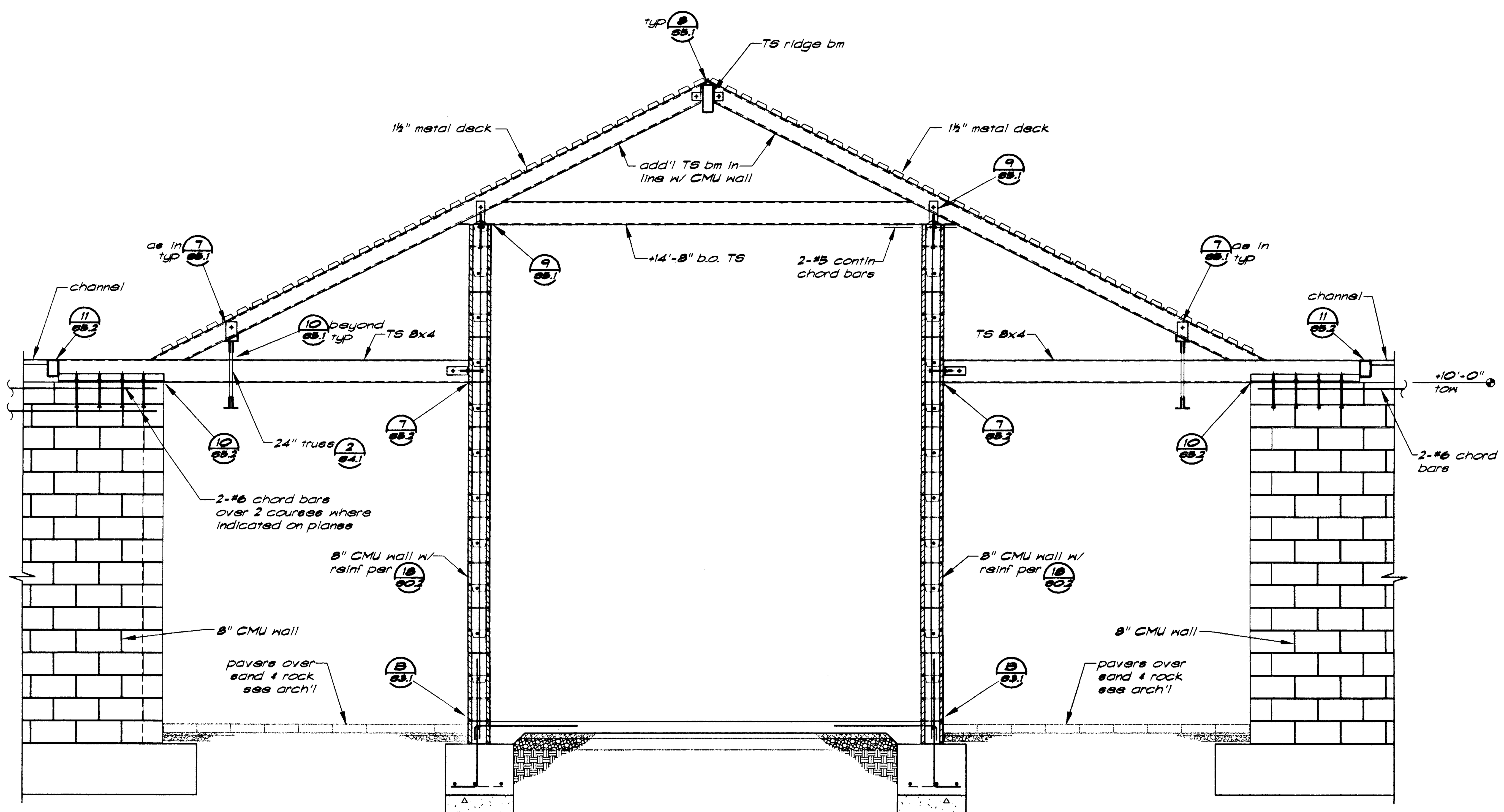
Elevation 2/S4.1 — 1/4"=1'-0"



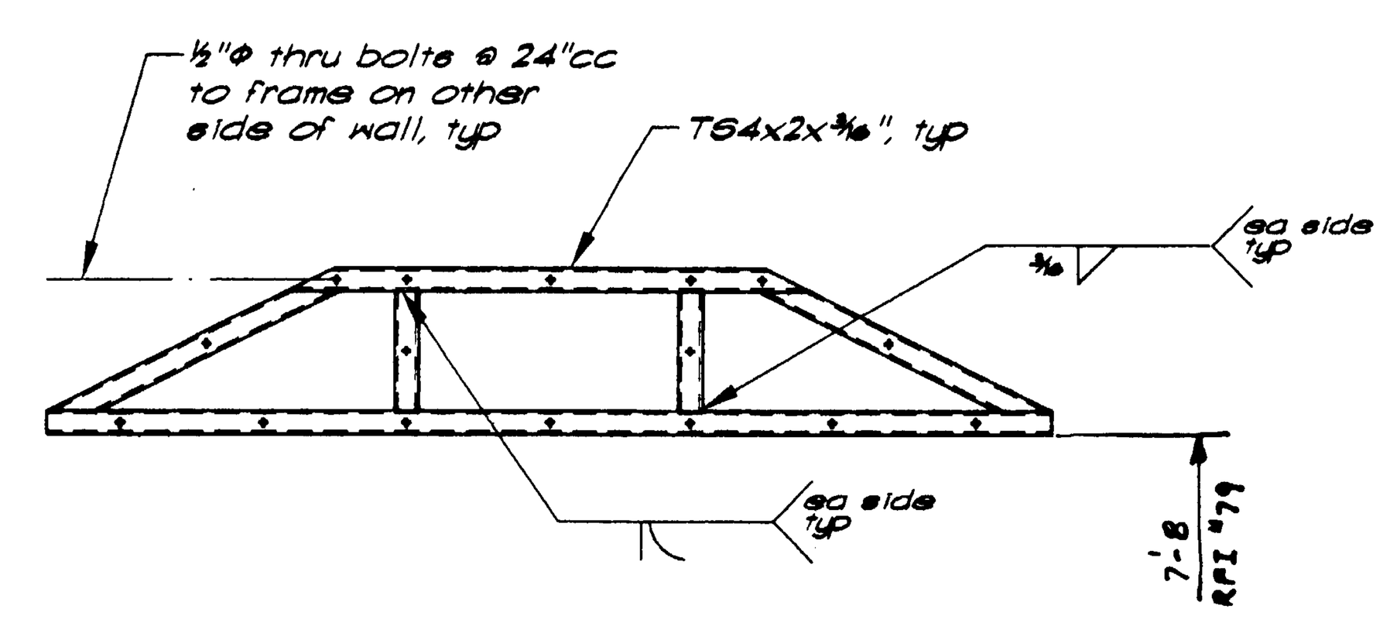
Detail 3/S4.1 — 1"=1'-0"



Elevation 4/S4.1 — 1/4"=1'-0"



Elevation 1/S4.1 — 1/2"=1'-0"



Note: TS beams framing into frame not shown for clarity

See arch for slope and roof extents

Elevation 5/S4.1 — 3/8"=1'-0"

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Elevations

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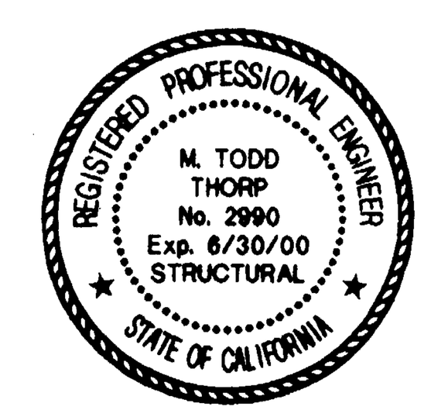
KEYNOTES



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PROJECT
BALFOUR ROAD AQUATIC CENTER

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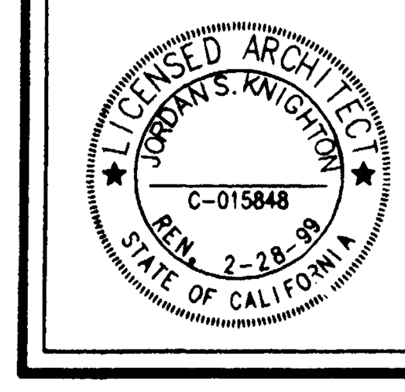

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530S001-1

(A/S5.1) Deck Welding Schedule

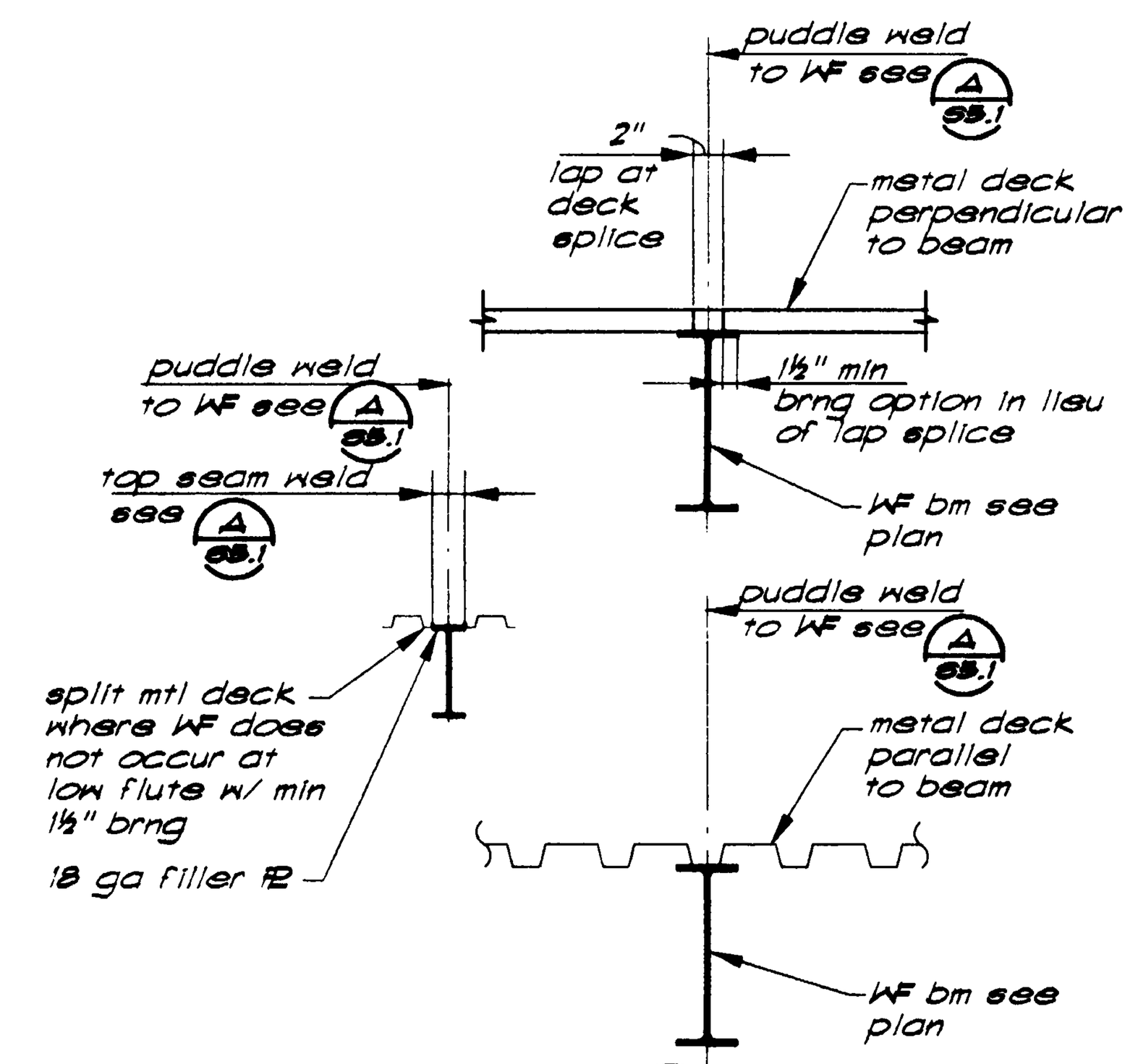
Deck Type	Depth & Gauge	Perpendicular Supports	Parallel Supports	Side Laps	Diaphragm Shear Capacity
B-36 Roof Deck	1½"x20ga	7 PW per sheet	PW @ 8"cc	BP @ 24" cc	670#/,

1. PW= ½ effective diameter puddle weld ; TSW= 1½ min top seam weld ; BP= button punch
2. Metal deck shall be BHP or approved equal, of type and gauge shown on plans and welded as shown above.
3. At composite floor decks, 3/4"Φ shear studs may substitute for ¾"Φ puddle welds.
4. See (B/S5.1) for typical weld patterns.
5. See (1/S5.1) for metal deck welding at struct steel supports.
6. All metal deck shall have two spans minimum.
7. Provide shoring as required at all decks per mfr recommendations.

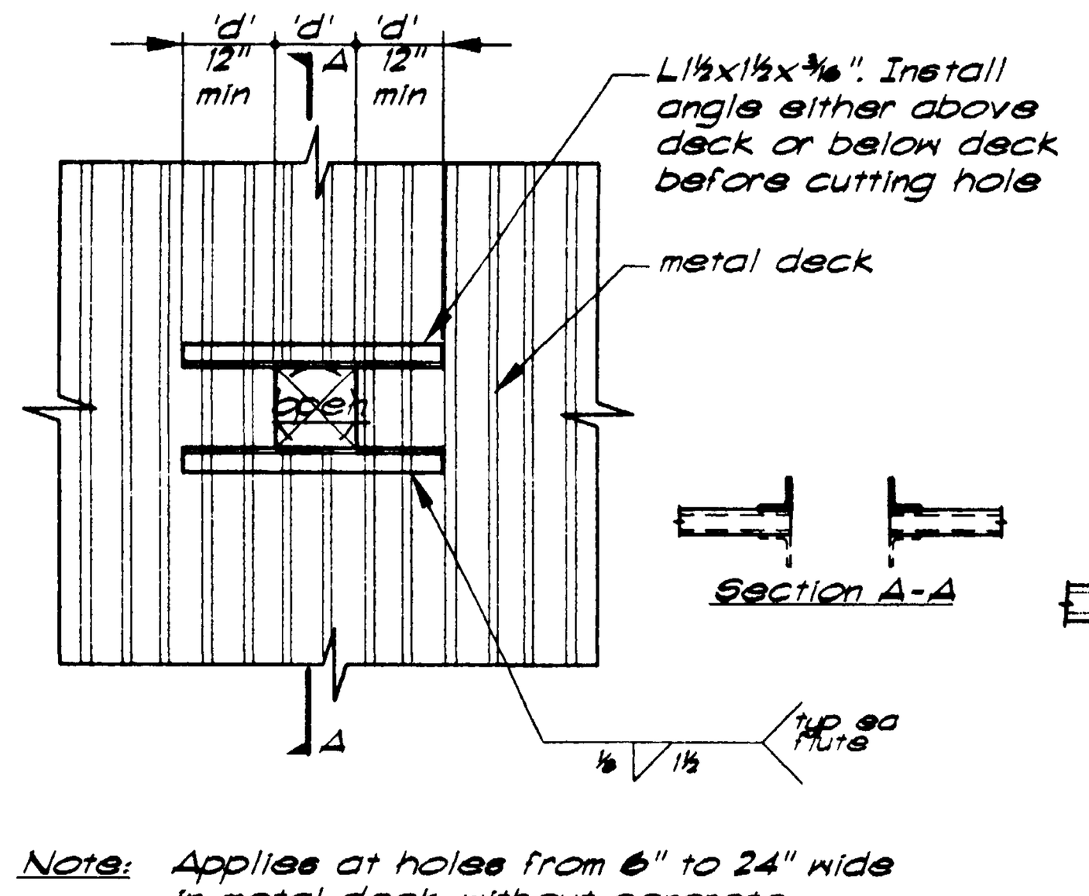
530S002-1

(B/S5.1) Metal Deck Weld Patterns

Deck Type	Profile	No. ¾"Φ PW per sheet
Type B36	36"	7

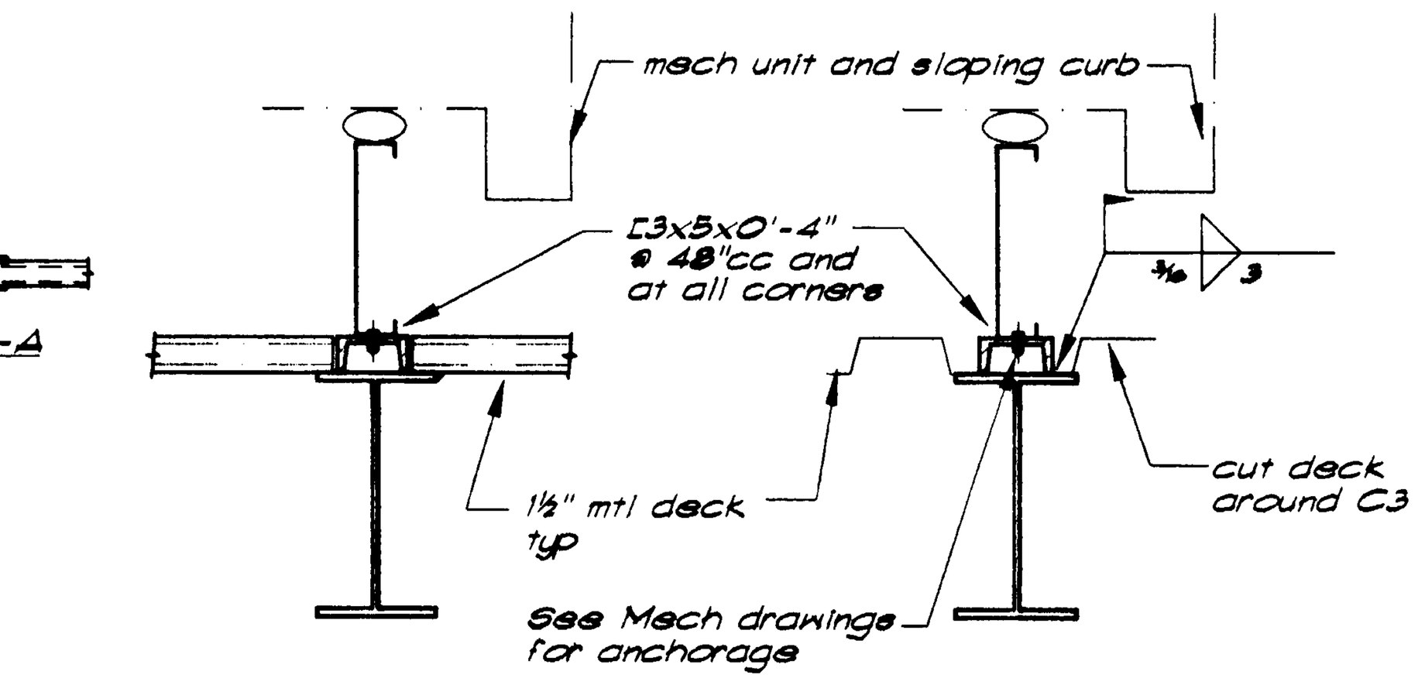


Detail (1/S5.1)
530S003-12
Metal deck without concrete to WF beams



Note: Applies at holes from 6" to 24" wide in metal deck without concrete.

Detail (2/S5.1)
530S016-12



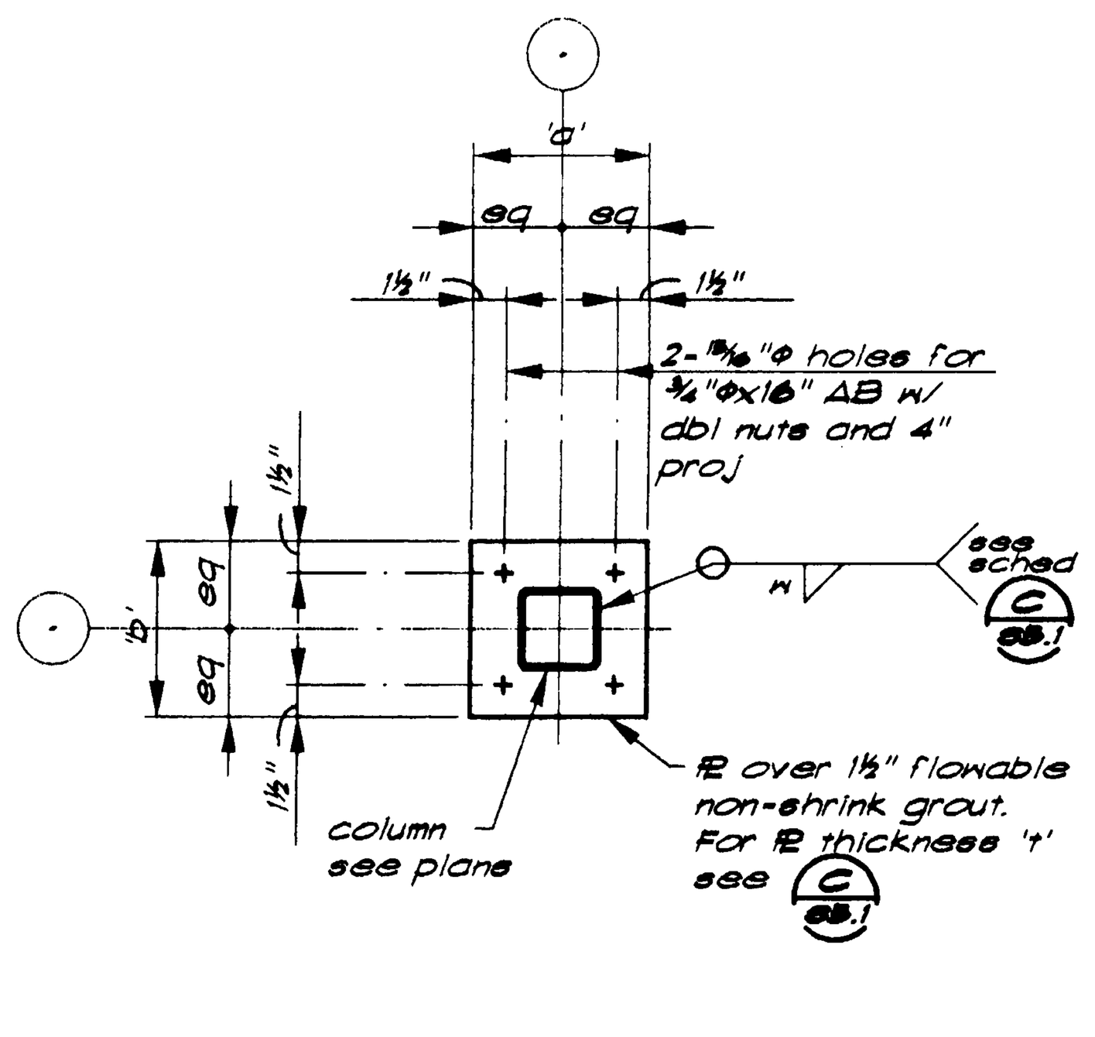
Detail (3/S5.1)
Mech curb at roof deck w/ C3x5
530S024-12

(C/S5.1) Base Plate Schedule

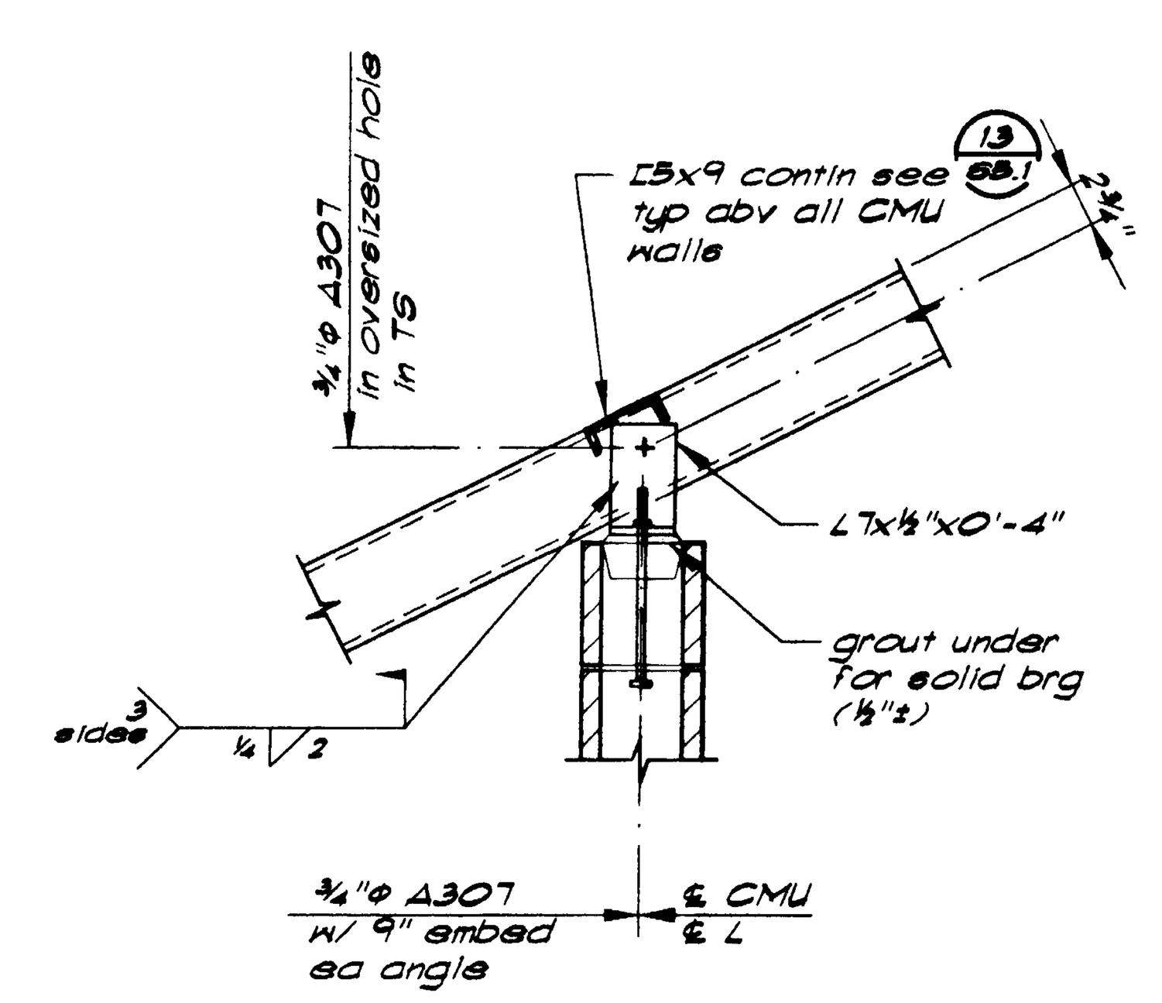
Column Size	Base Plate Size 't'	'a'	'b'	'c'	'd'	'e'
3x3	5/8"	9"	9"	3½"	2"	7"
4x4	5/8"	10"	10"	5"	2½"	7½"
5x5	1"	11"	11"	5½"	3"	8"
6x6	1"	12"	12"	7"	3½"	8½"
7x7	1¼"	13"	13"	8"	4"	9"
8x8	1¼"	14"	14"	9"	4½"	9½"
10x10	1½"	16"	16"	11"	5½"	10½"
12x12	1½"	18"	18"	13"	6½"	11½"

Notes:
1. Weld 'w' shall be ¼" at base plates ¾" and less, 5/16" at base plates greater than ¾".

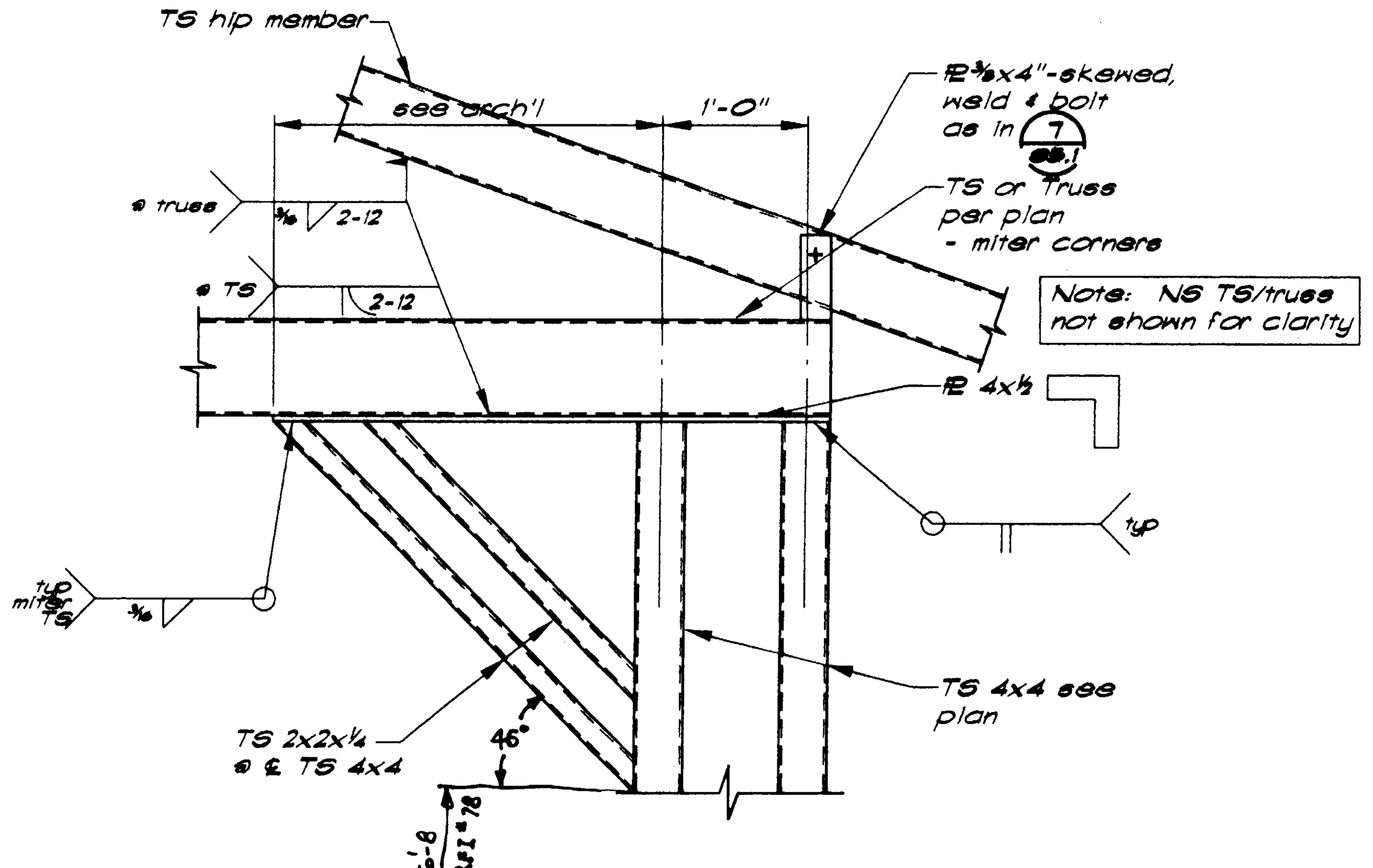
510S001-1



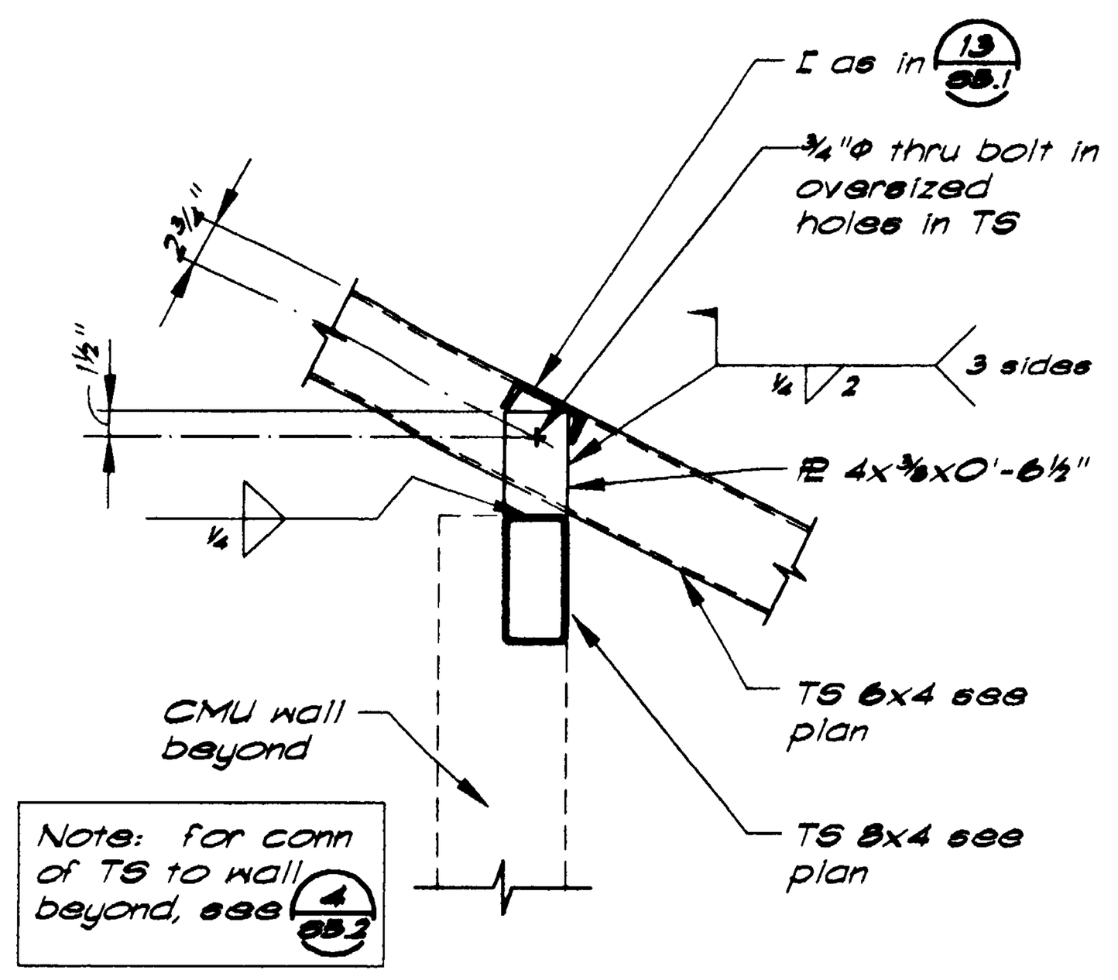
Detail (4/S5.1)
510S002-12



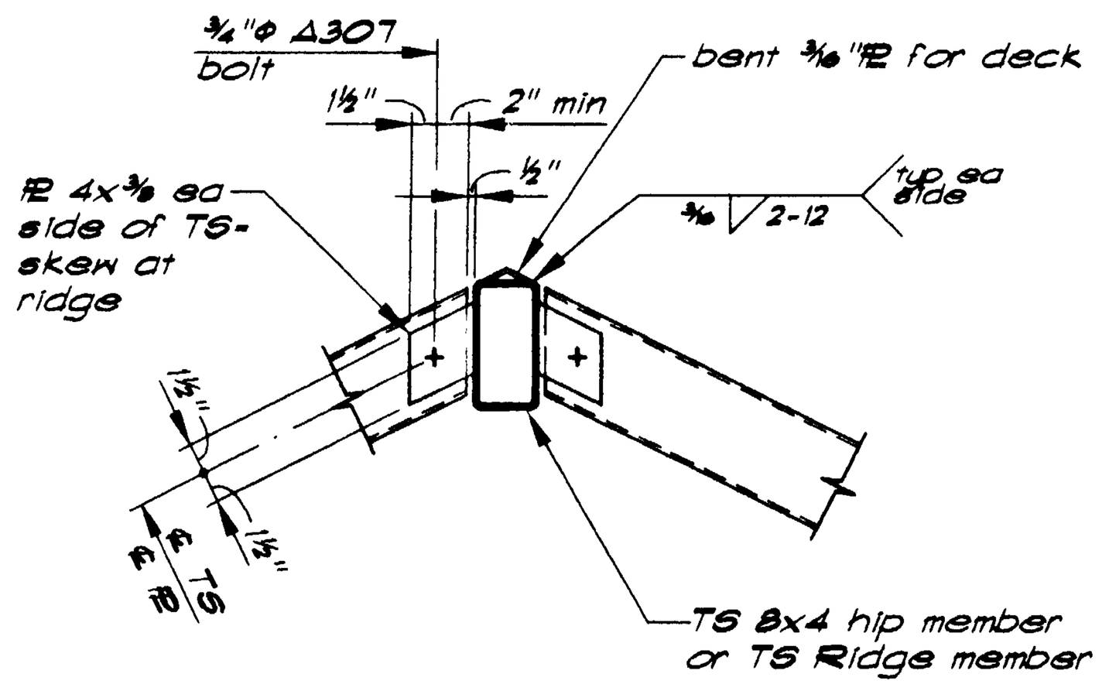
Detail (5/S5.1) — 1"=1'-0"



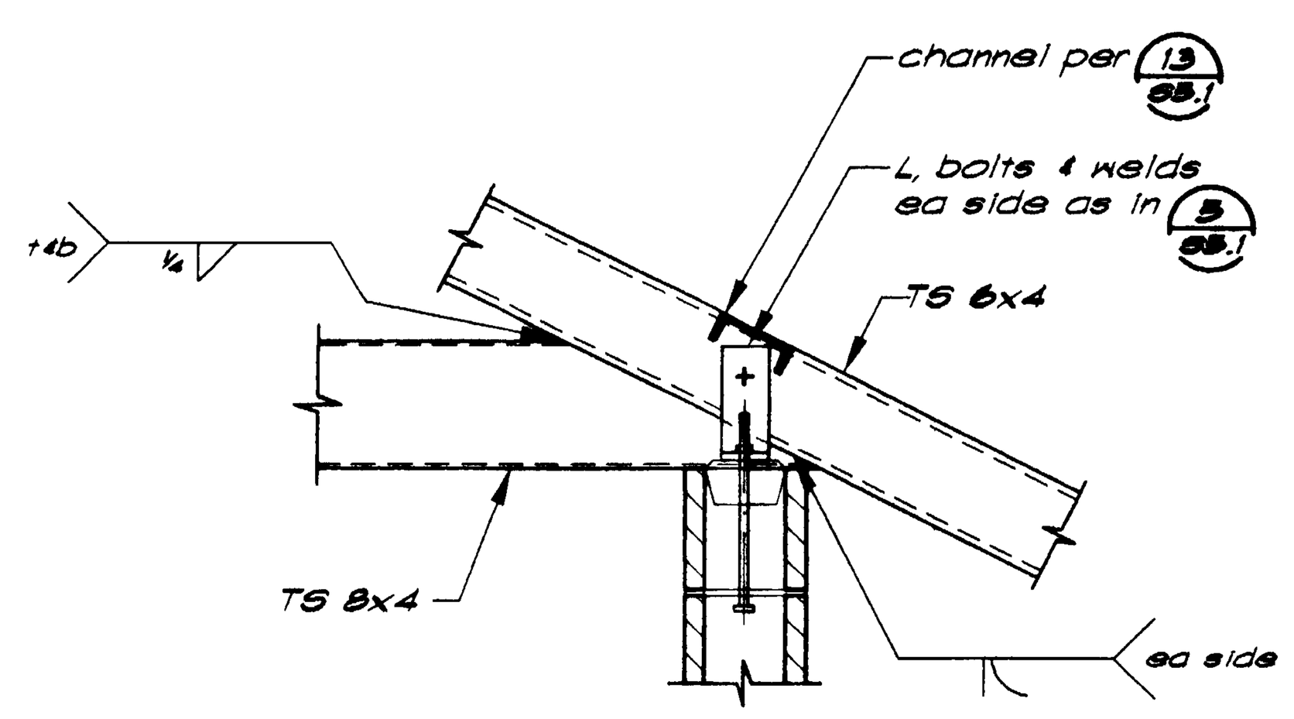
Detail (6/S5.1) — 1"=1'-0"



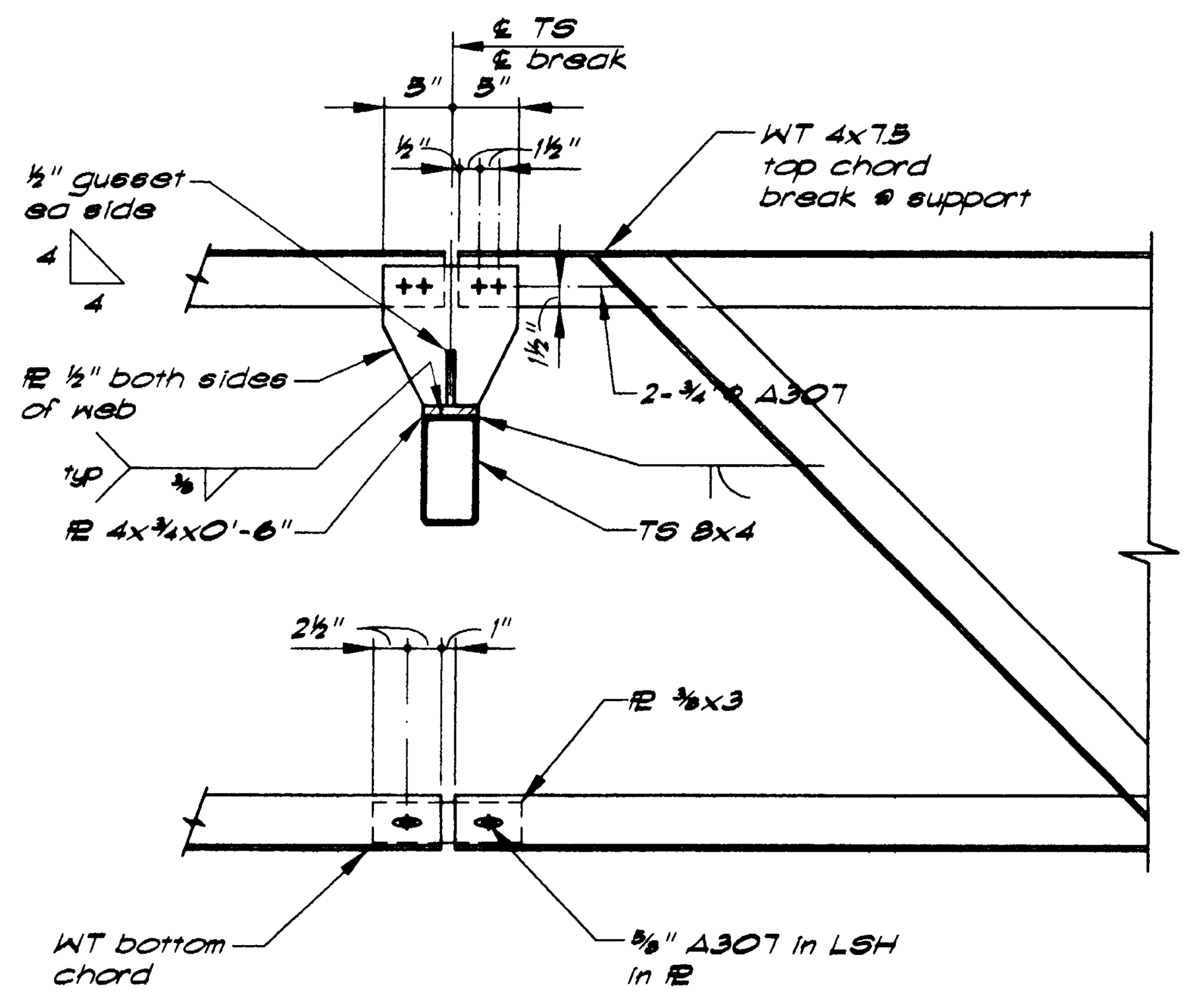
Detail (7/S5.1) — 1"=1'-0"



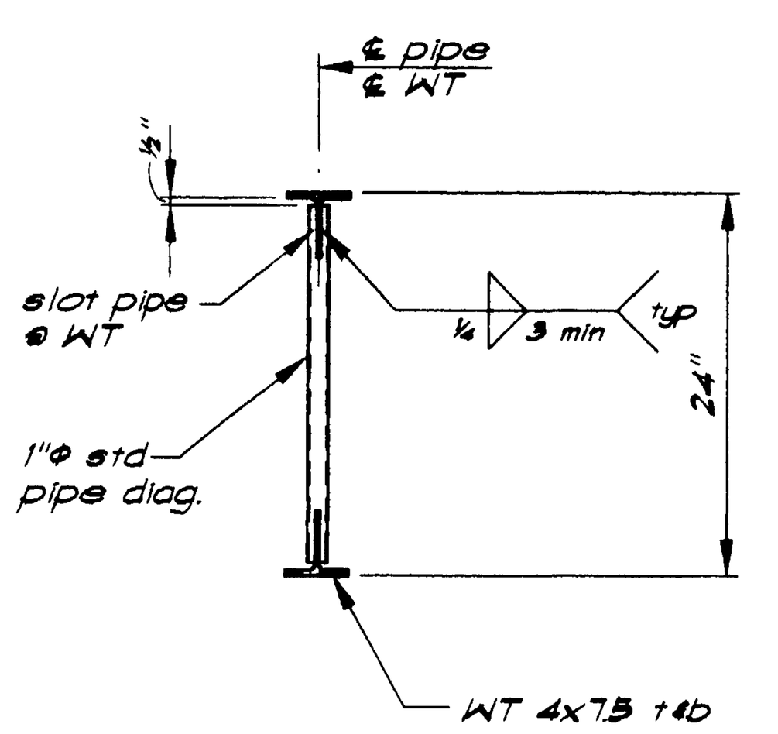
Detail (8/S5.1) — 1"=1'-0"



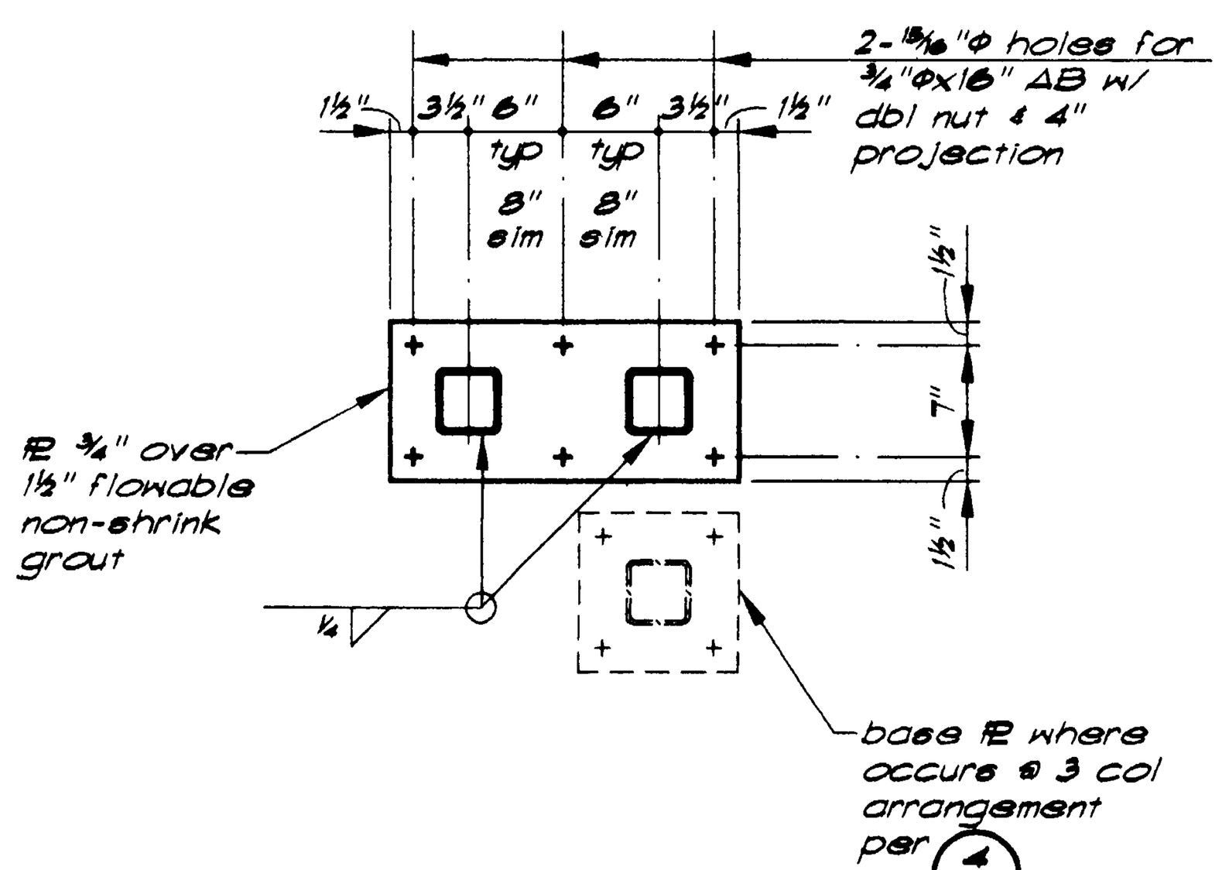
Detail (9/S5.1) — 1"=1'-0"



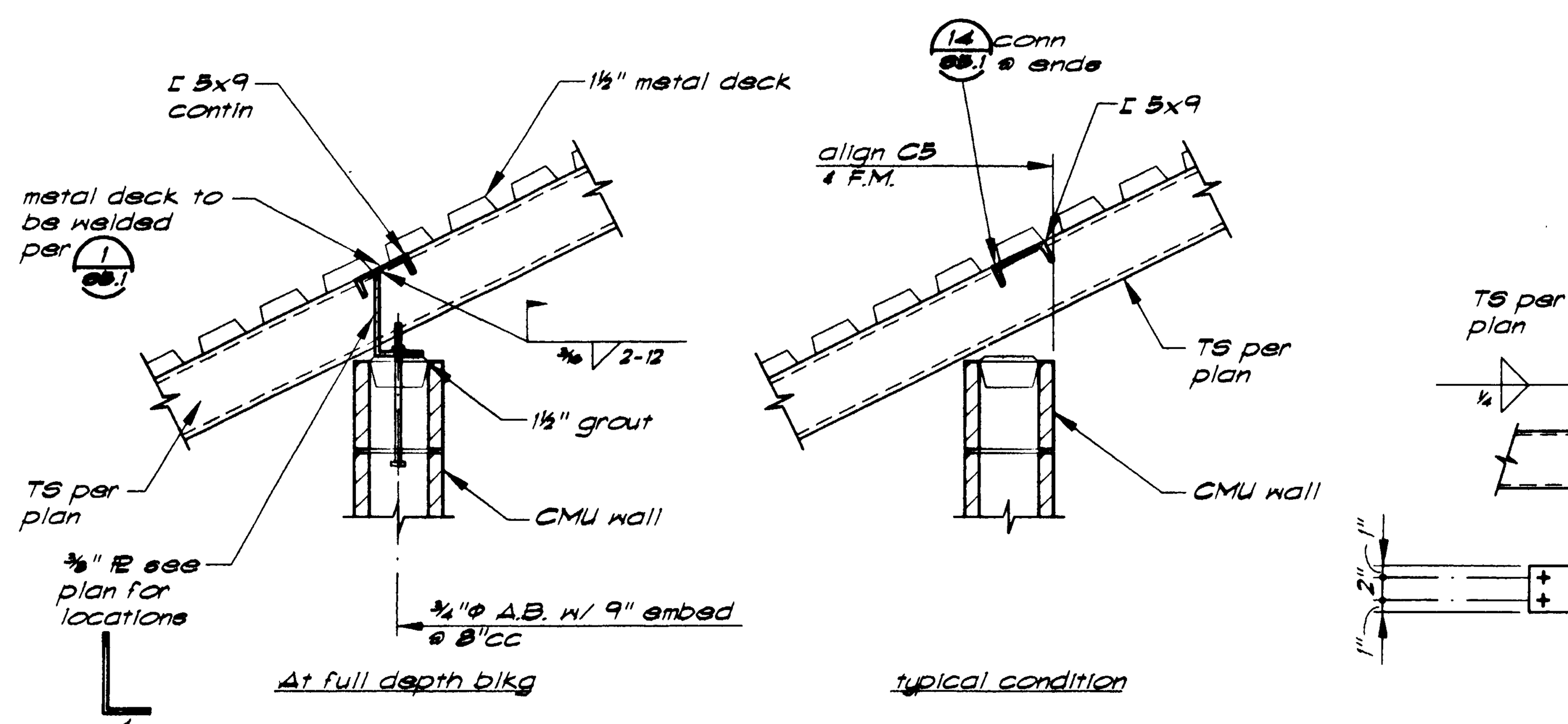
Detail (10/S5.1) — 1"=1'-0"



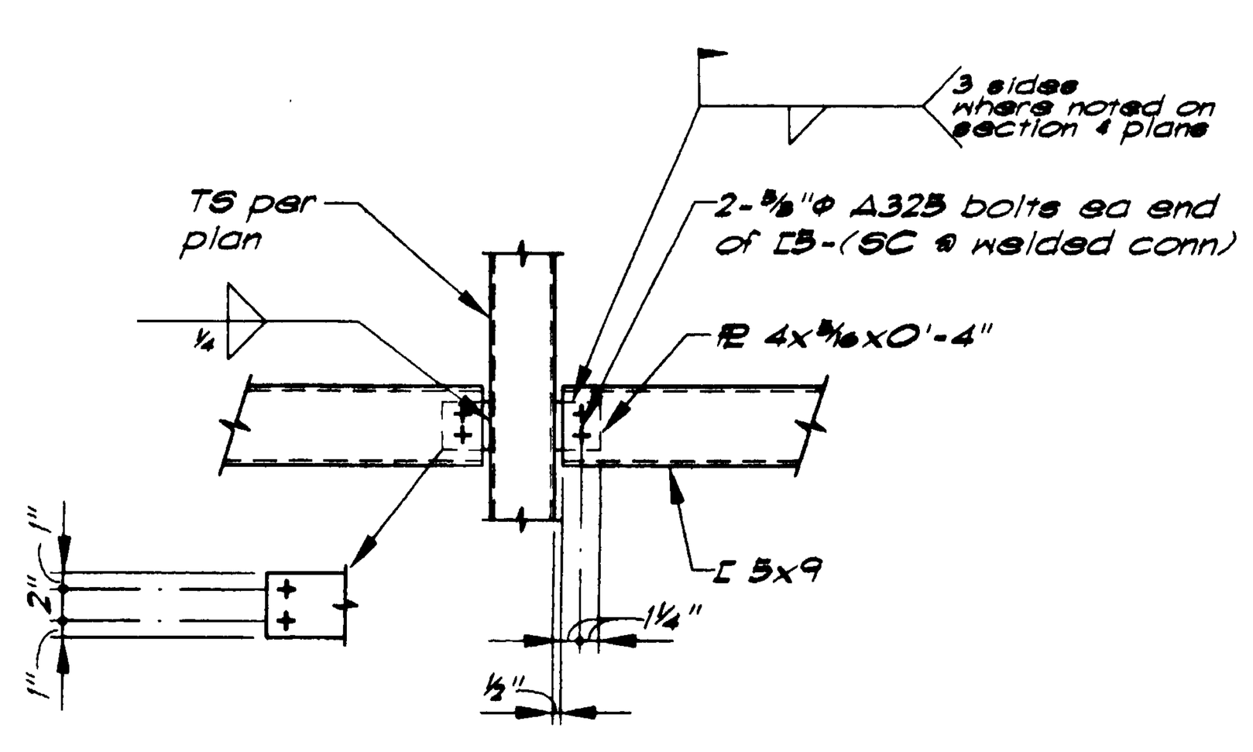
Detail (11/S5.1) — 1"=1'-0"



Detail (12/S5.1) — 1"=1'-0"



Detail (13/S5.1) — 1"=1'-0"



Detail (14/S5.1) — 1"=1'-0"

KEYNOTES

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PROJECT
BALFOUR ROAD AQUATIC CENTER

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TYPICAL DETAILS

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Typical Details - 2

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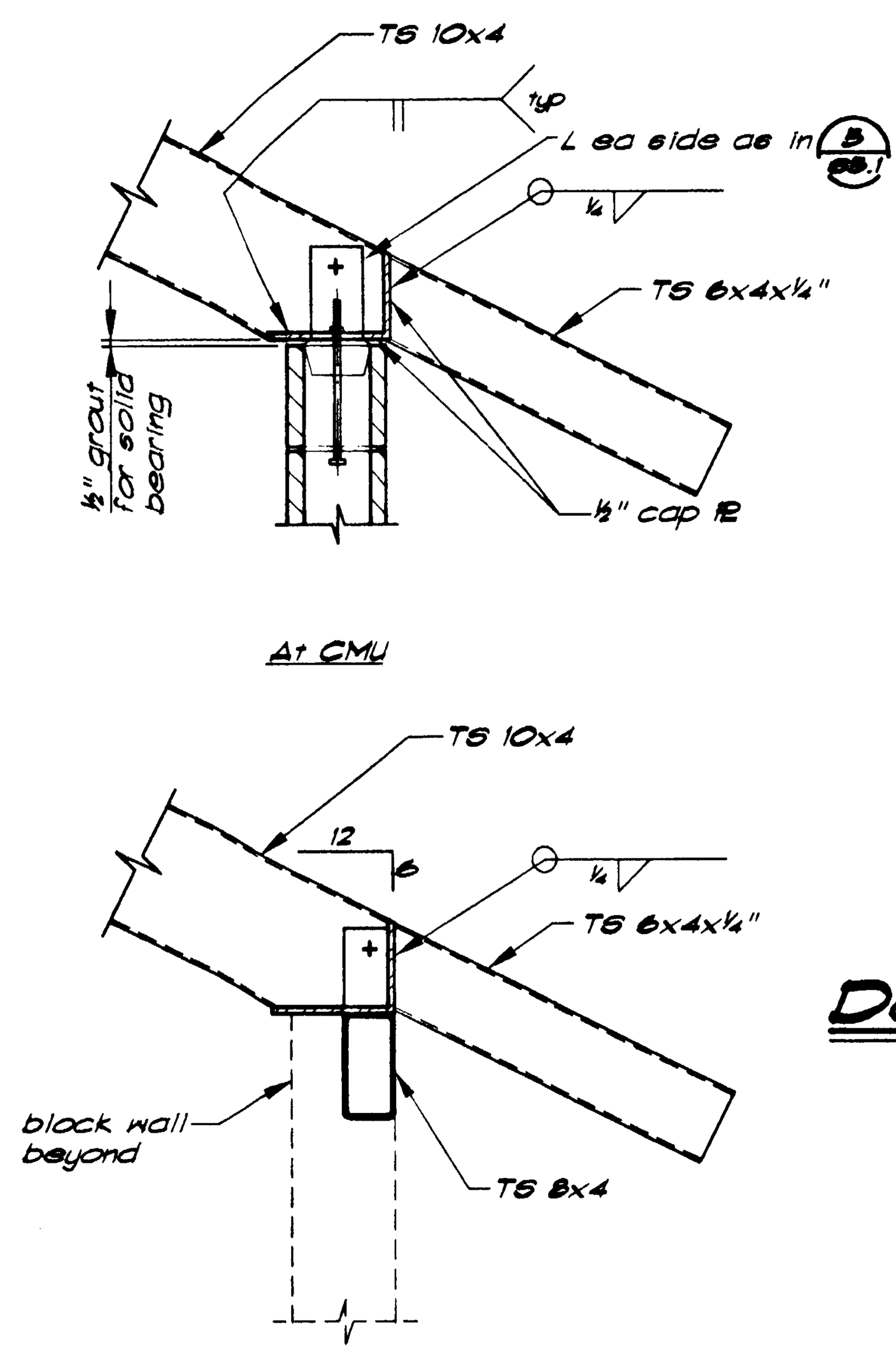
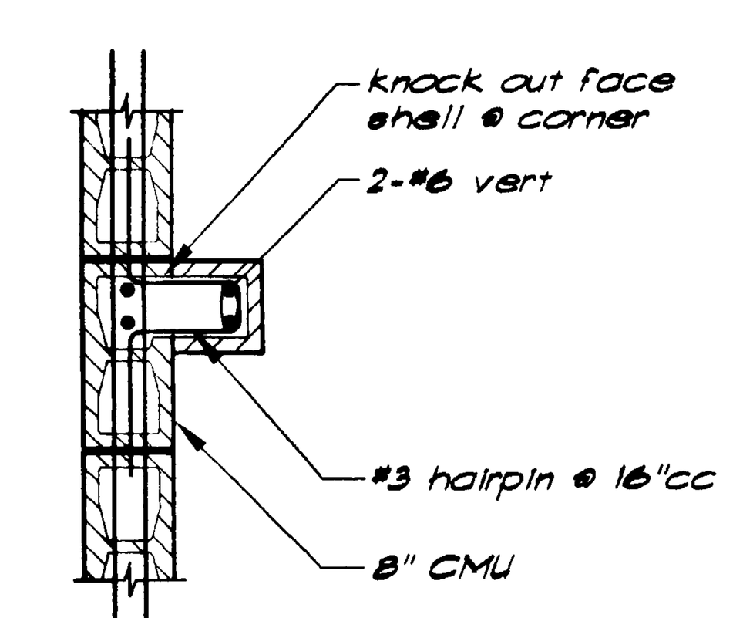
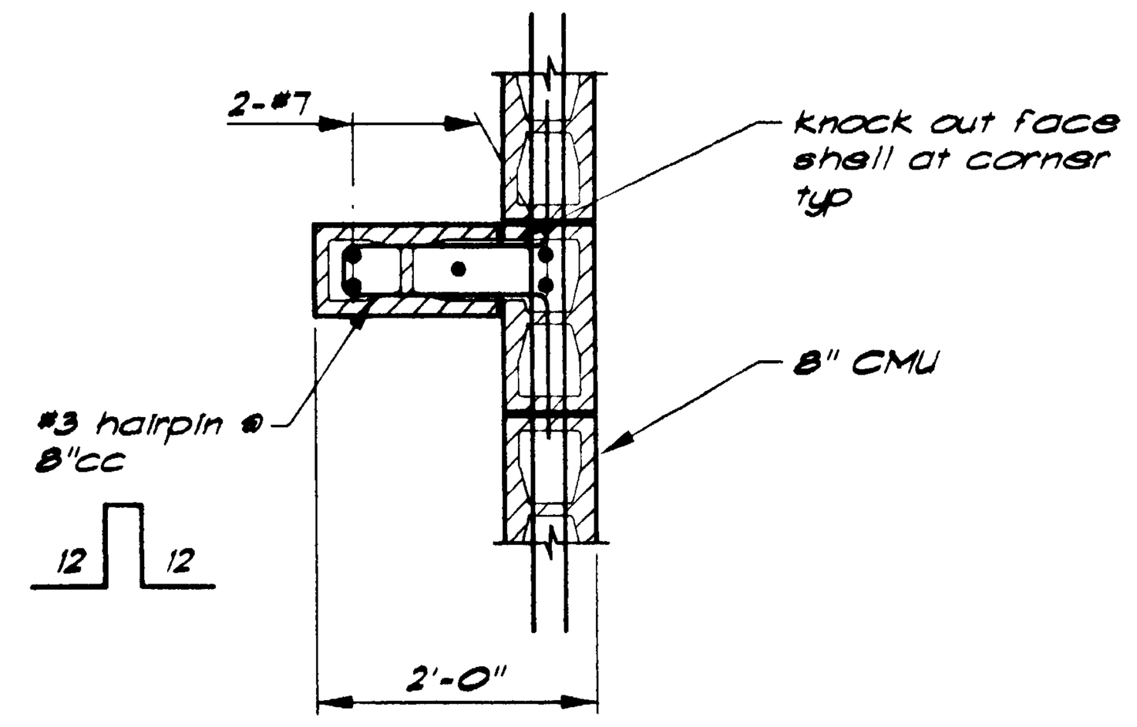


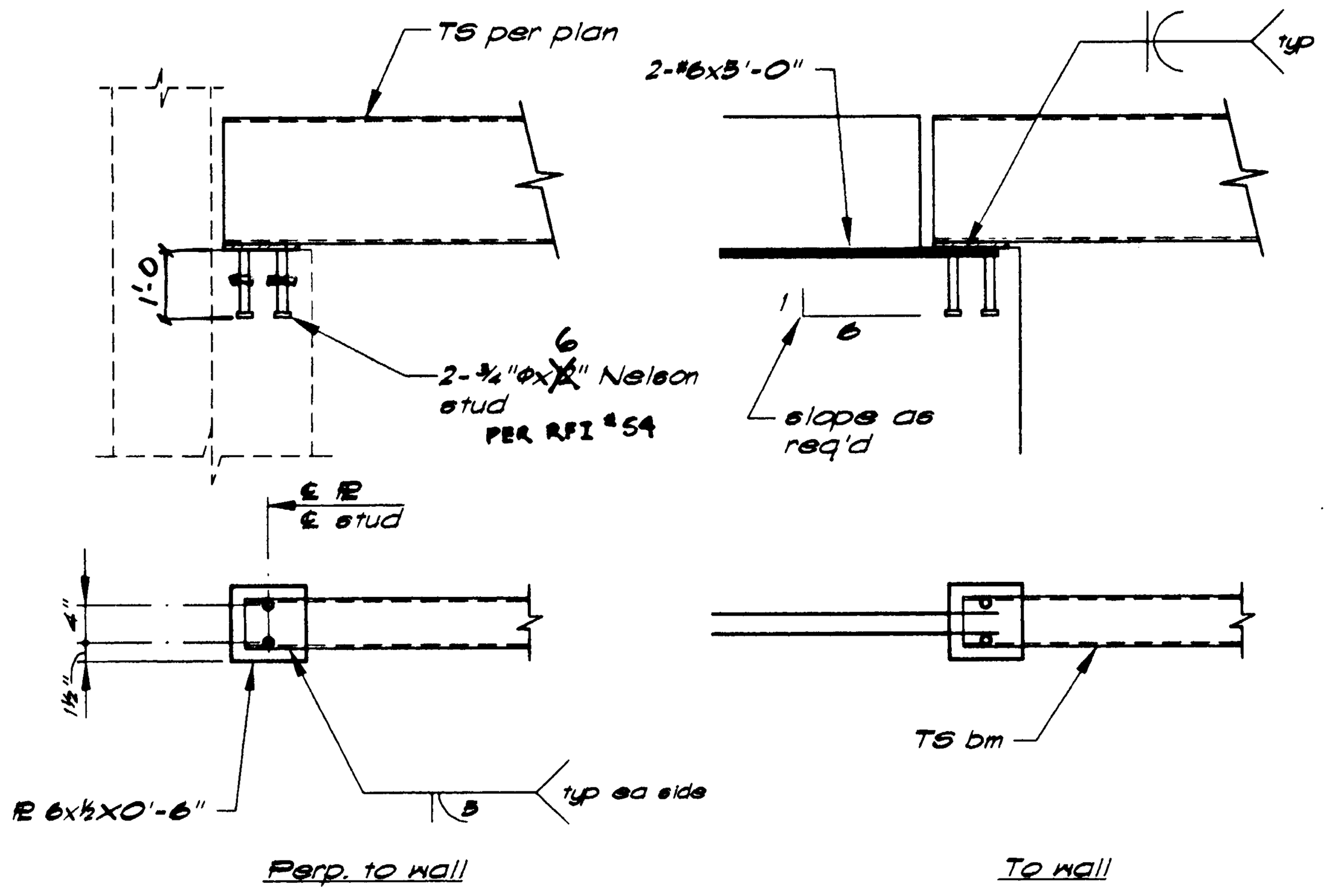
Detail 1/S5.2 — 1"=1'-0"



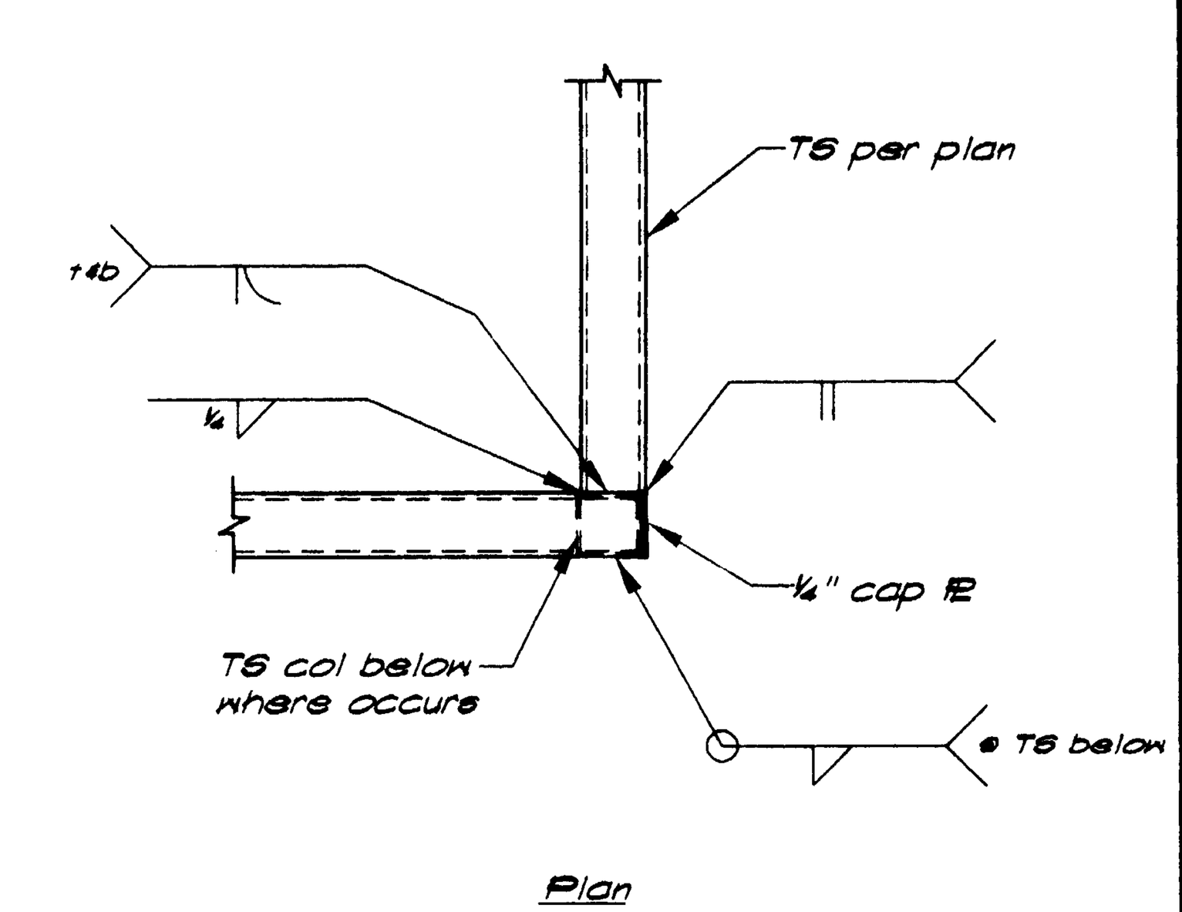
Detail 2/S5.2 — 3/4"=1'-0"



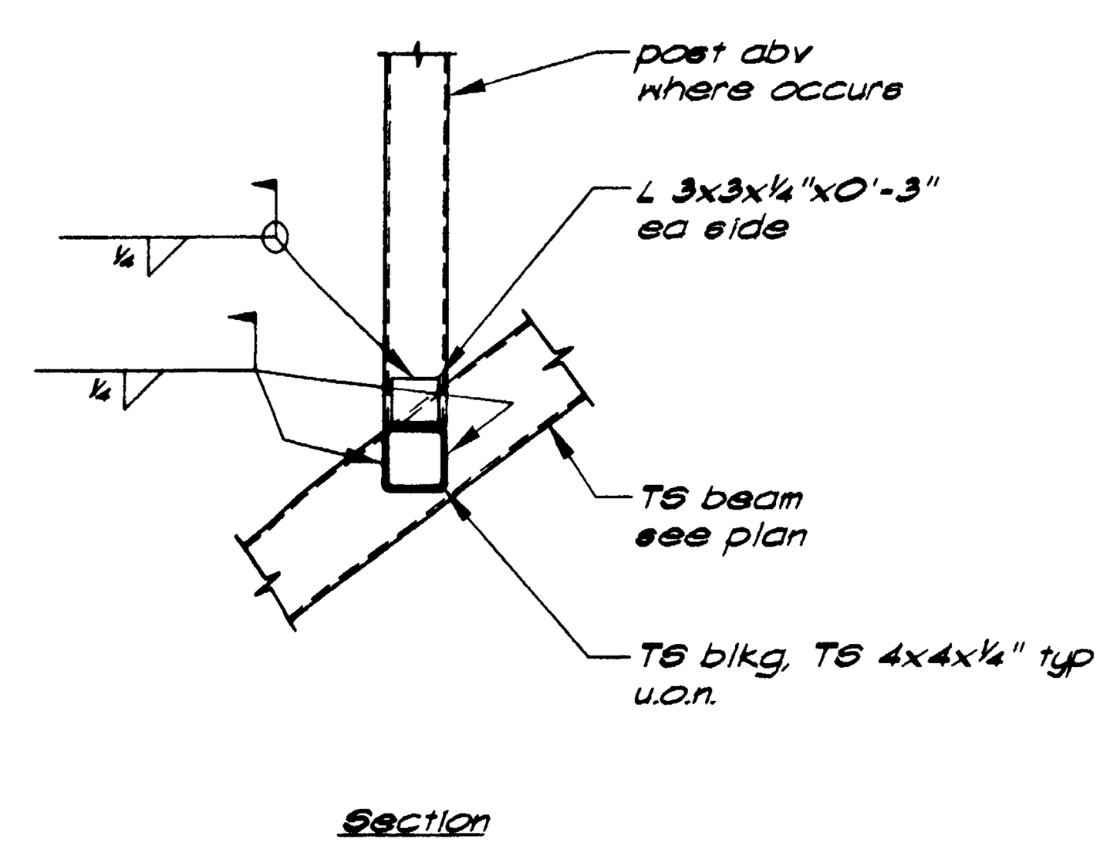
Detail 3/S5.2 — 3/4"=1'-0"



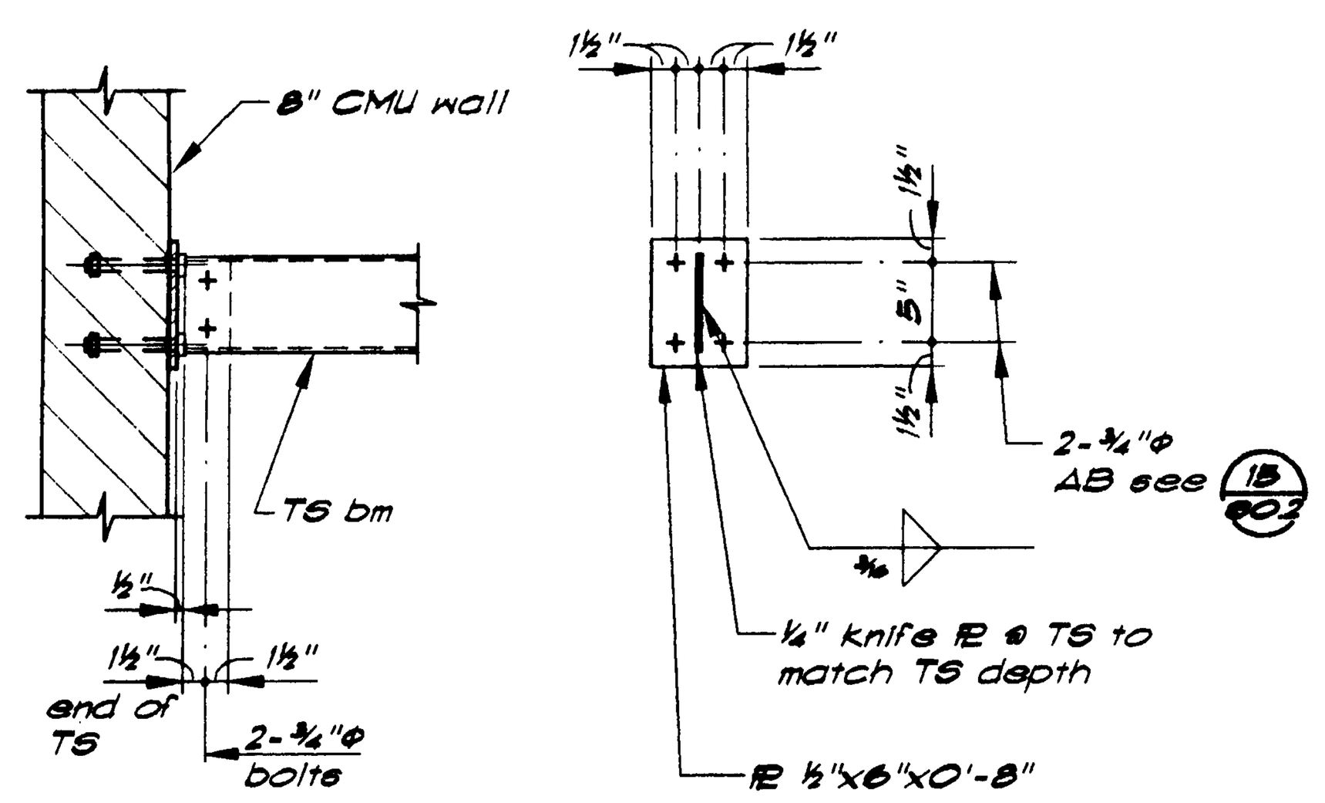
Detail 4/S5.2 — 1"=1'-0"



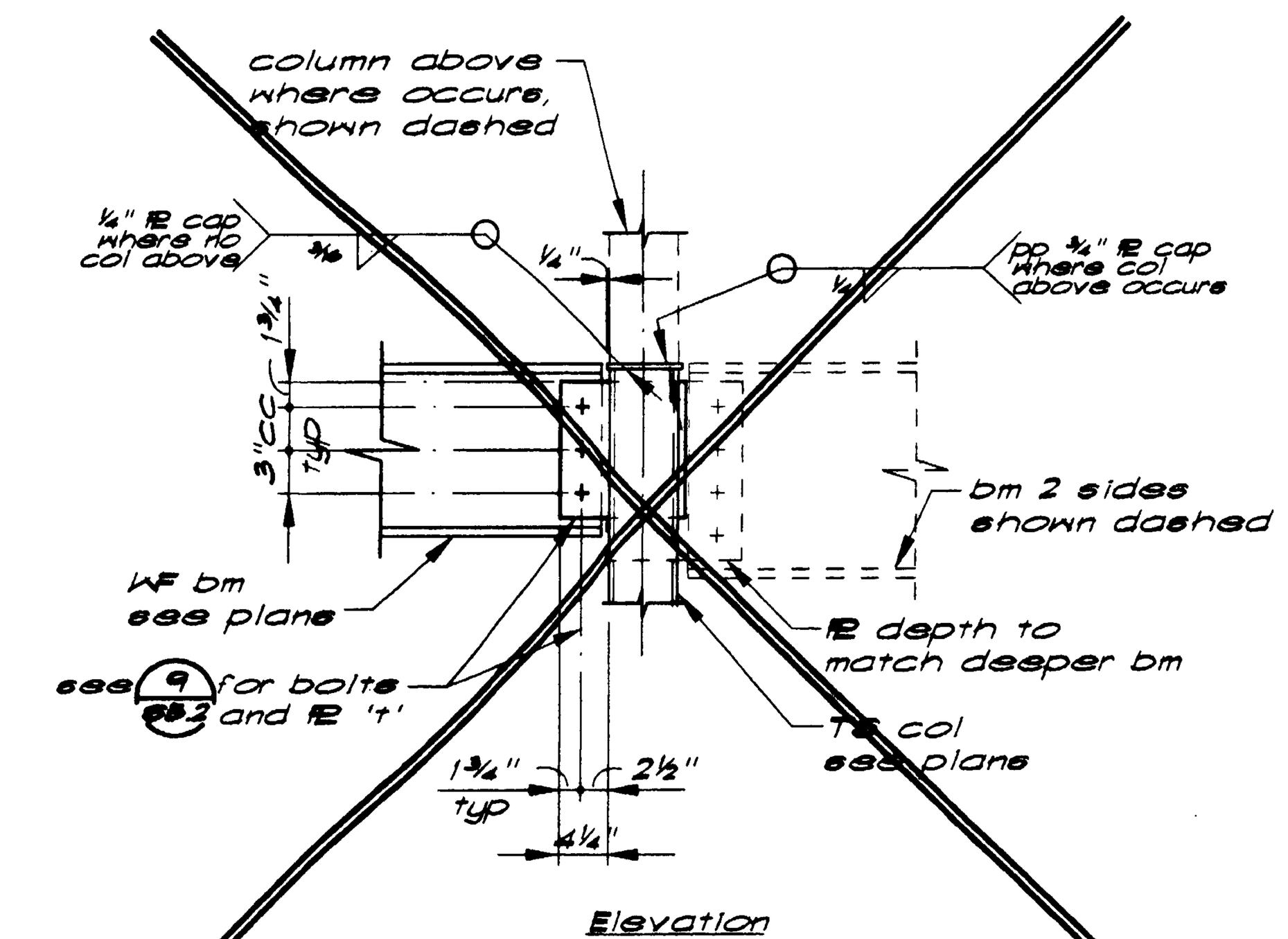
Detail 5/S5.2 — 1"=1'-0"



Detail 6/S5.2 — 1"=1'-0"



Detail 7/S5.2 — 1"=1'-0"



Detail 8/S5.2

510S151-12

Not Used

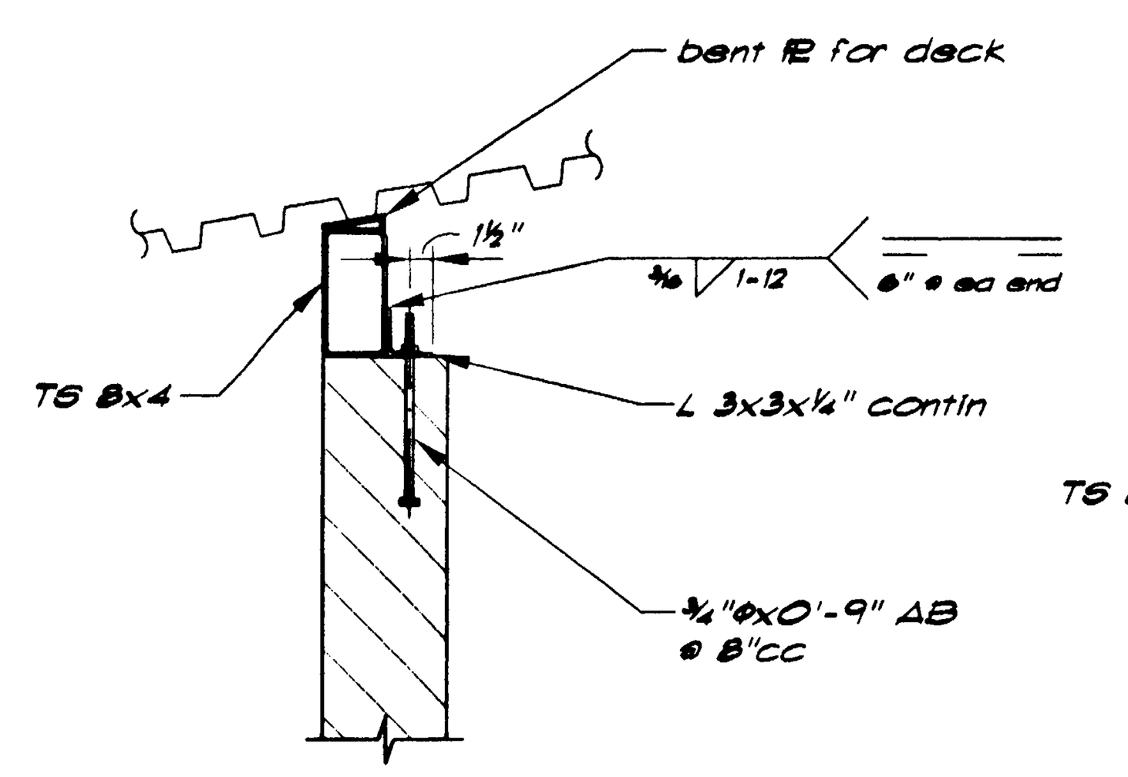
510S100-1

Connection Schedule 9/S5.2

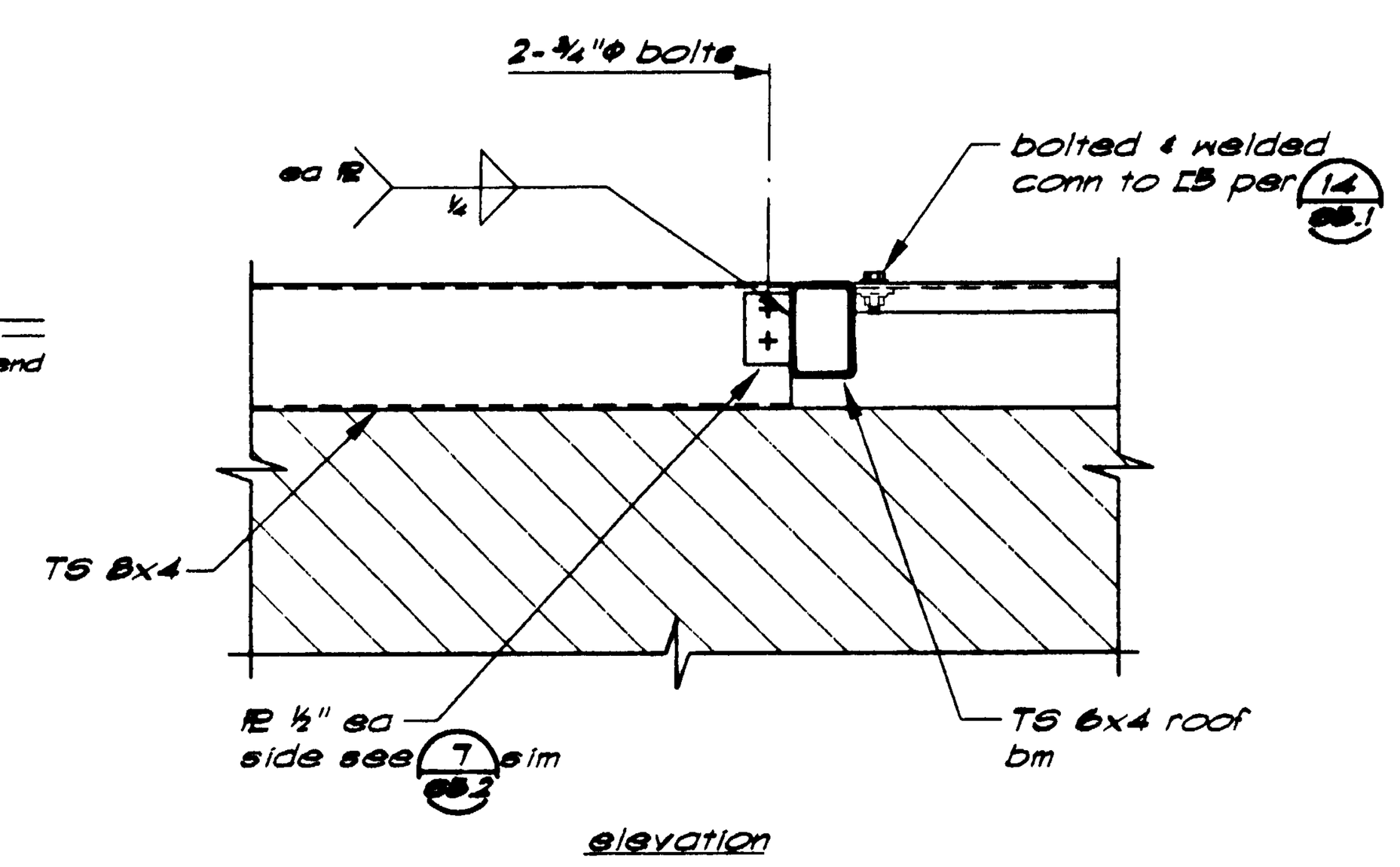
Beam Size	No. & Dia. A-325-N Bolts	Shr PL 't'	W
C8 & C10	2 - 7/8"φ	1/4"	3/16"
W8 & W10	2 - 7/8"φ	1/4"	3/16"
W12 & W14	3 - 7/8"φ	1/4"	3/16"
W16	4 - 7/8"φ	3/8"	1/4"
W18	5 - 7/8"φ	3/8"	1/4"
W21	5 - 7/8"φ	3/8"	1/4"
W24	6 - 7/8"φ	3/8"	1/4"
W27	[illegible] - 7/8"φ	3/8"	1/4"
W30	8-1"φ	1/2"	5/16"
W33	9-1"φ	5/8"	5/16"
W36	10-1"φ	5/8"	5/16"

1/ This schedule applies to non-frame connections, typical.

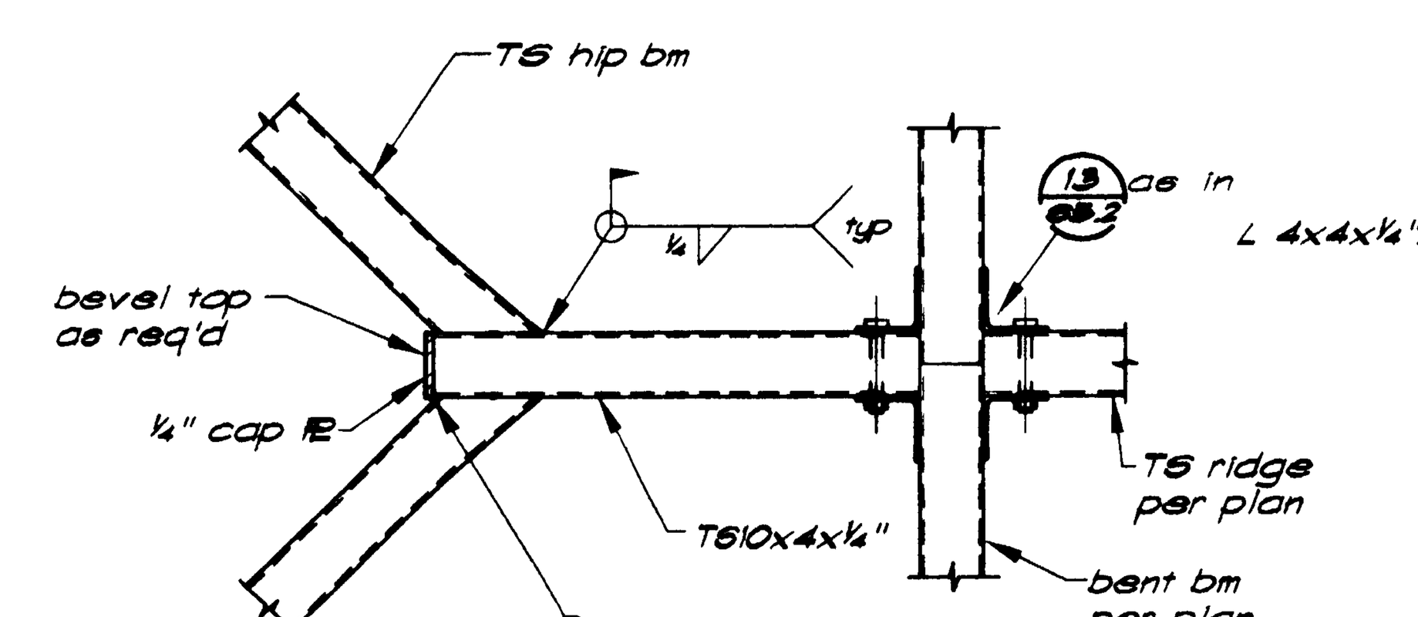
Not Used



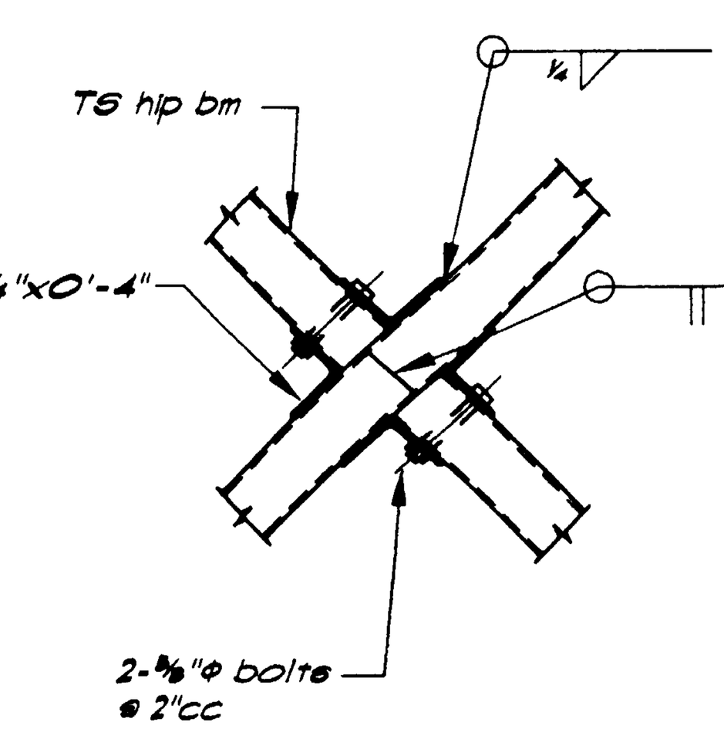
Detail 10/S5.2 — 1"=1'-0"



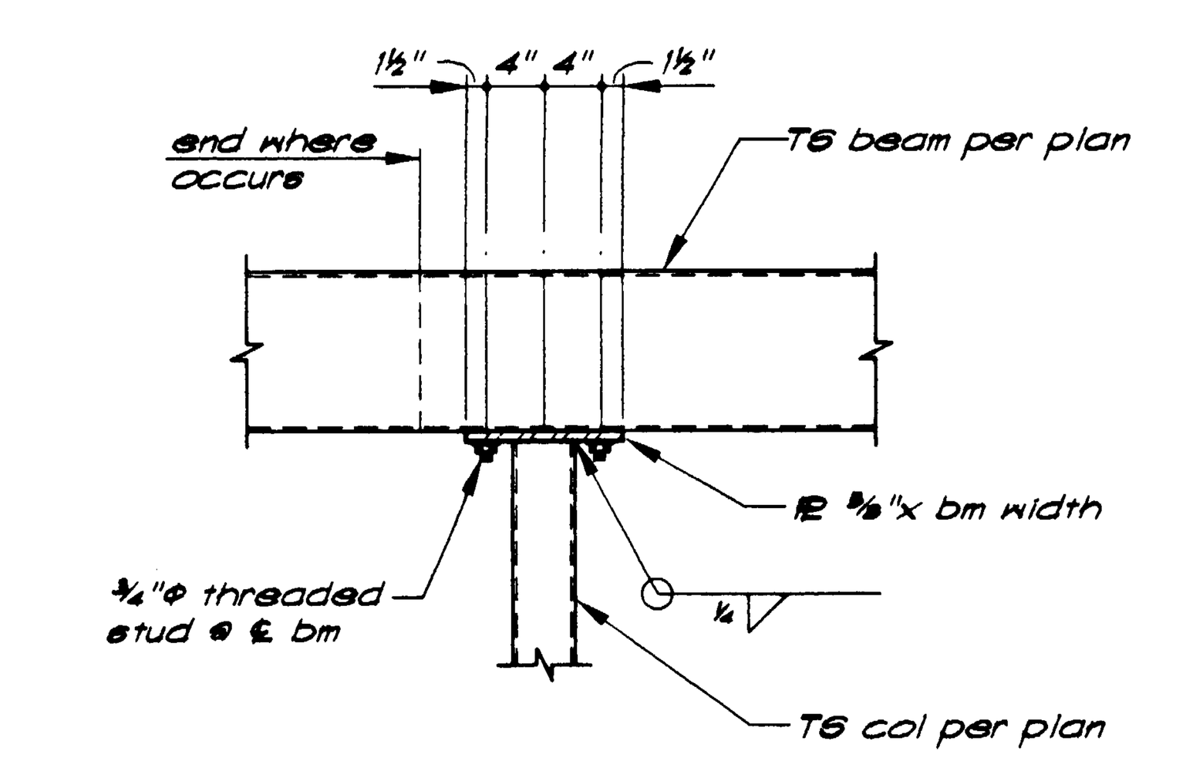
Detail 11/S5.2 — 1"=1'-0"



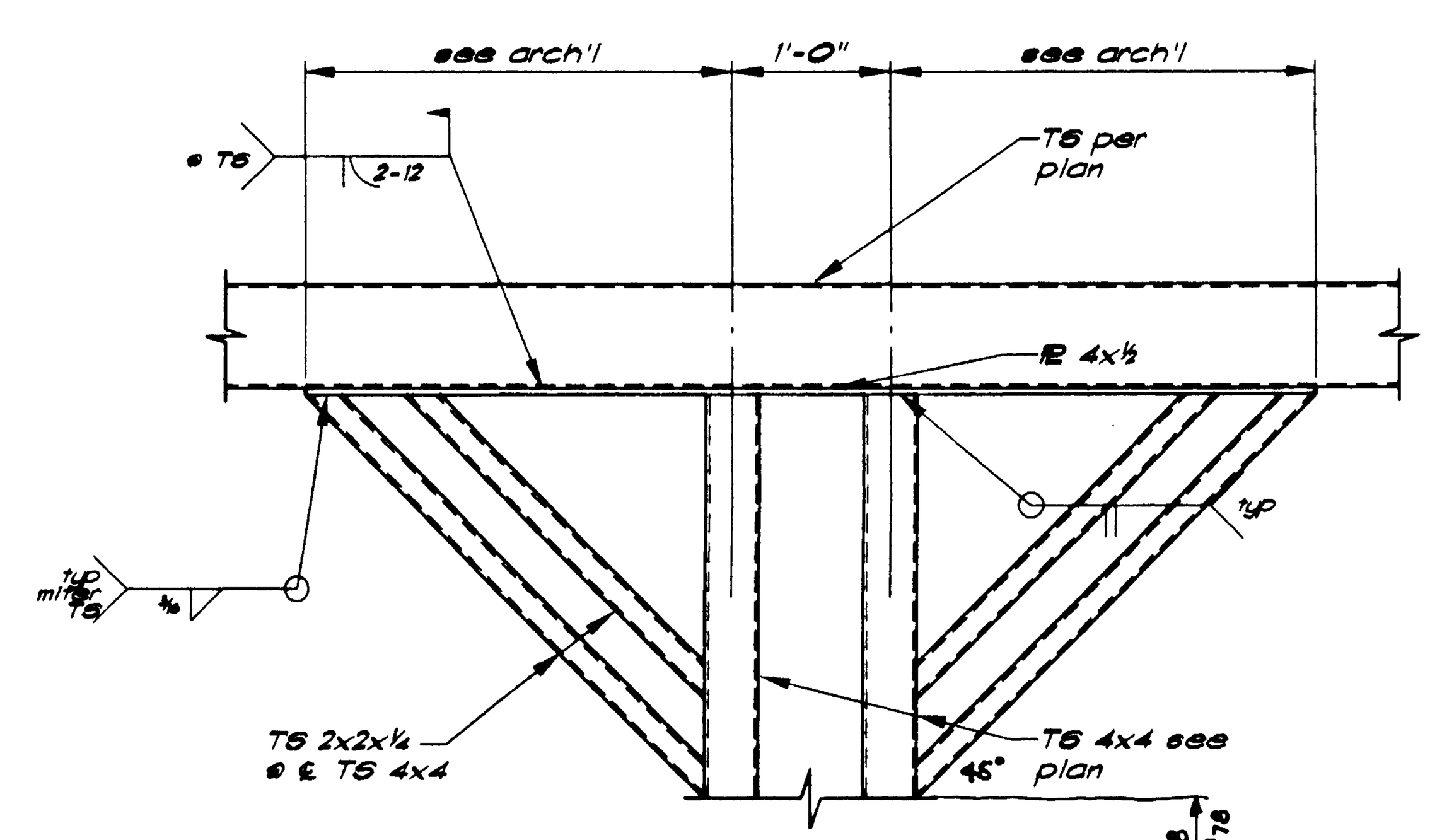
Detail 12/S5.2 — 1"=1'-0"



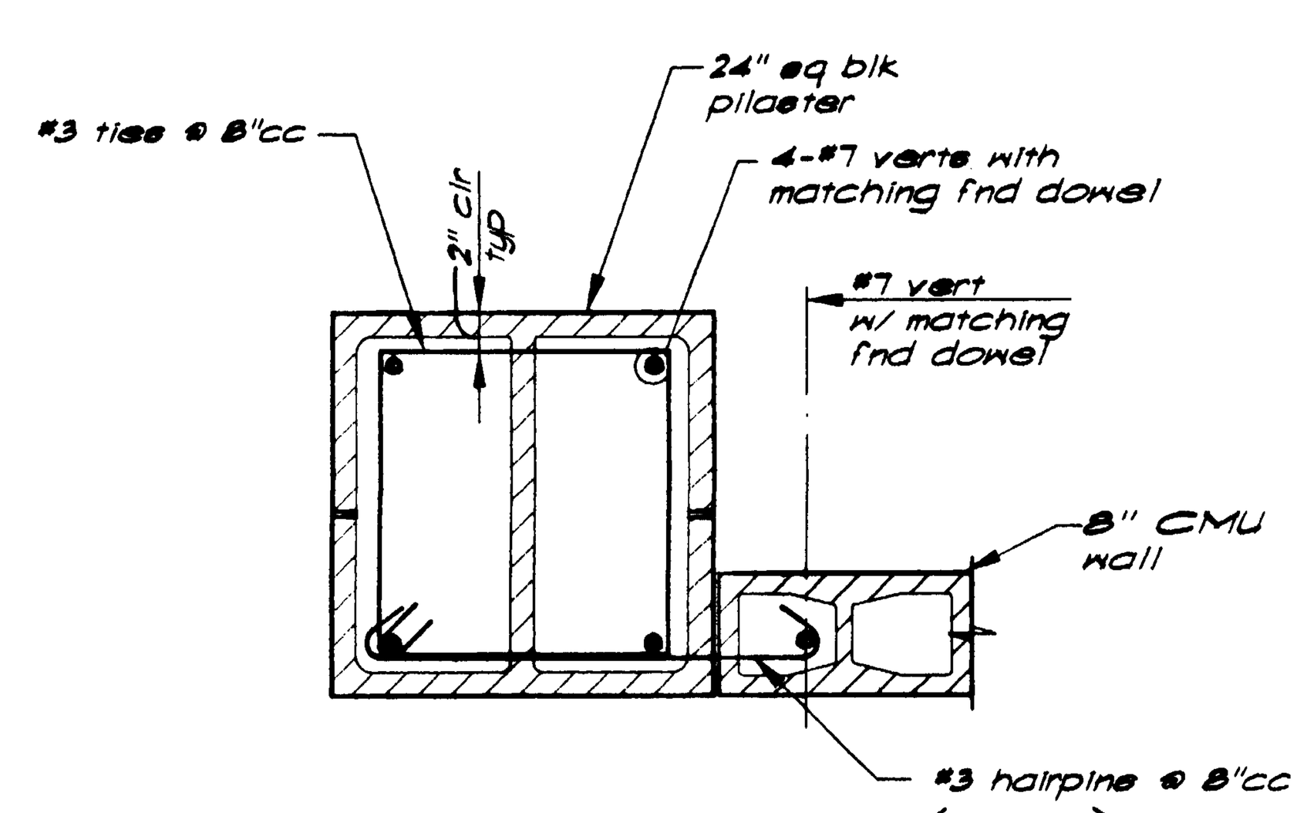
Detail 13/S5.2 — 1"=1'-0"



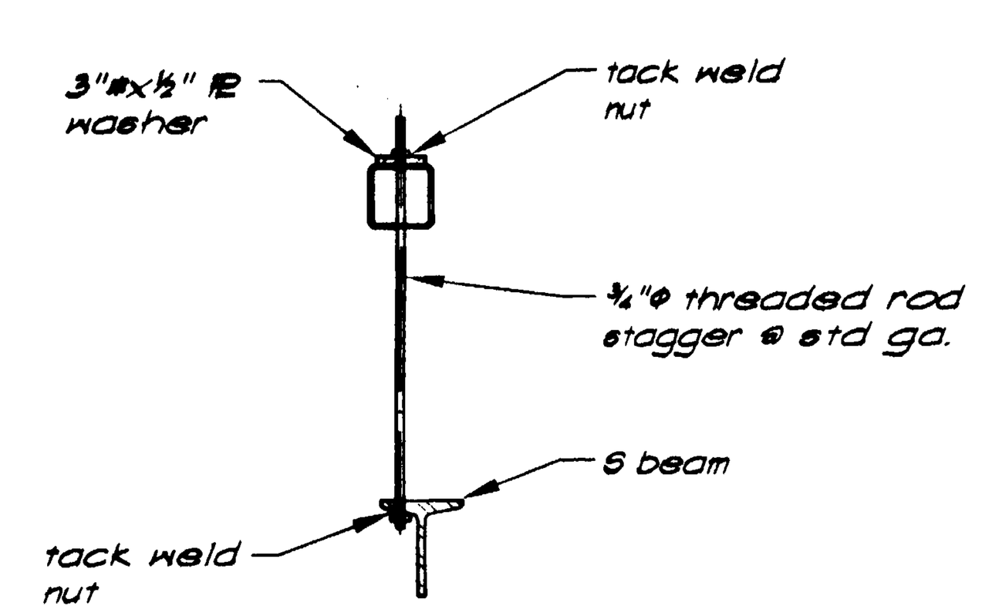
Detail 14/S5.2 — 1"=1'-0"



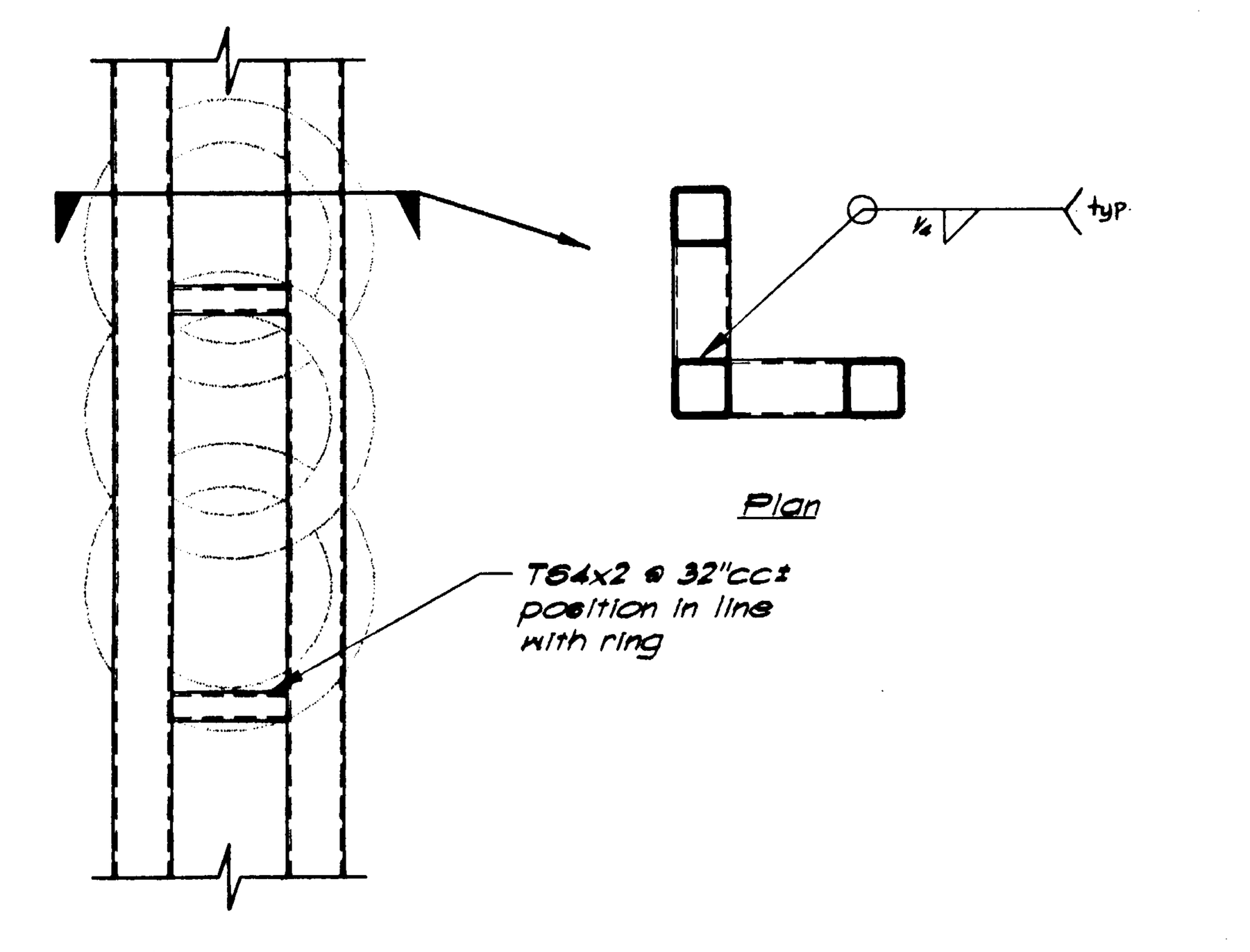
Detail 15/S5.2 — 1"=1'-0"



Detail 16/S5.2 — 1"=1'-0"



Detail 17/S5.2 — 1"=1'-0"



Detail 18/S5.2 — 1"=1'-0"

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Details

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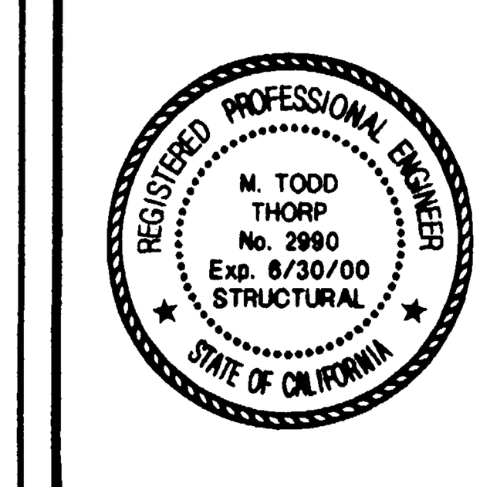
KEYNOTES



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PROJECT
BALFOUR ROAD AQUATIC CENTER

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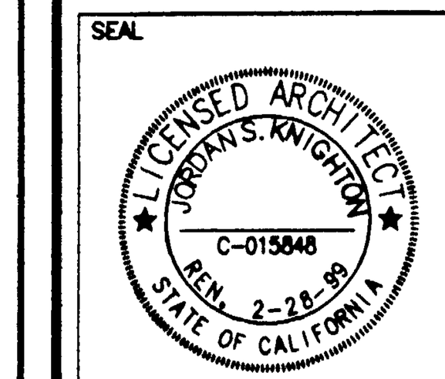
DETAILS

SEAL



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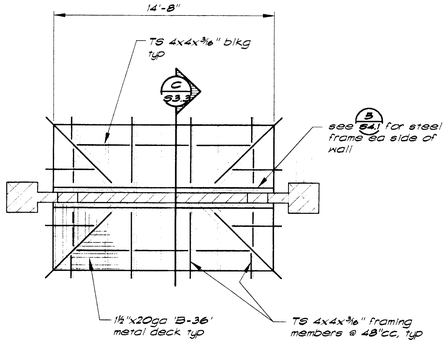
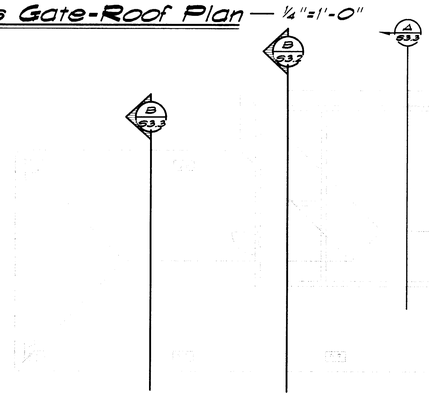
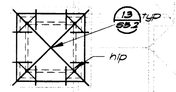
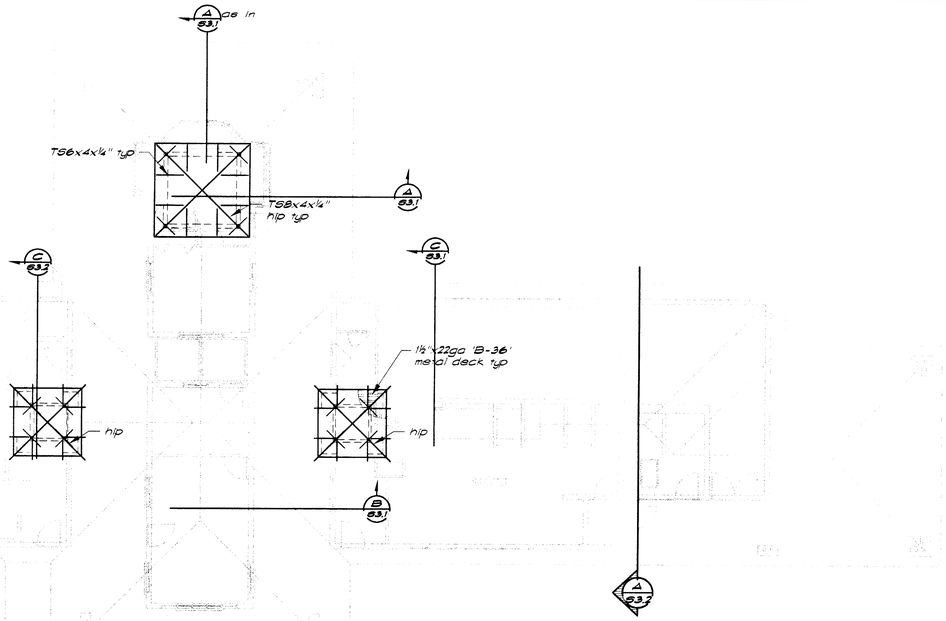


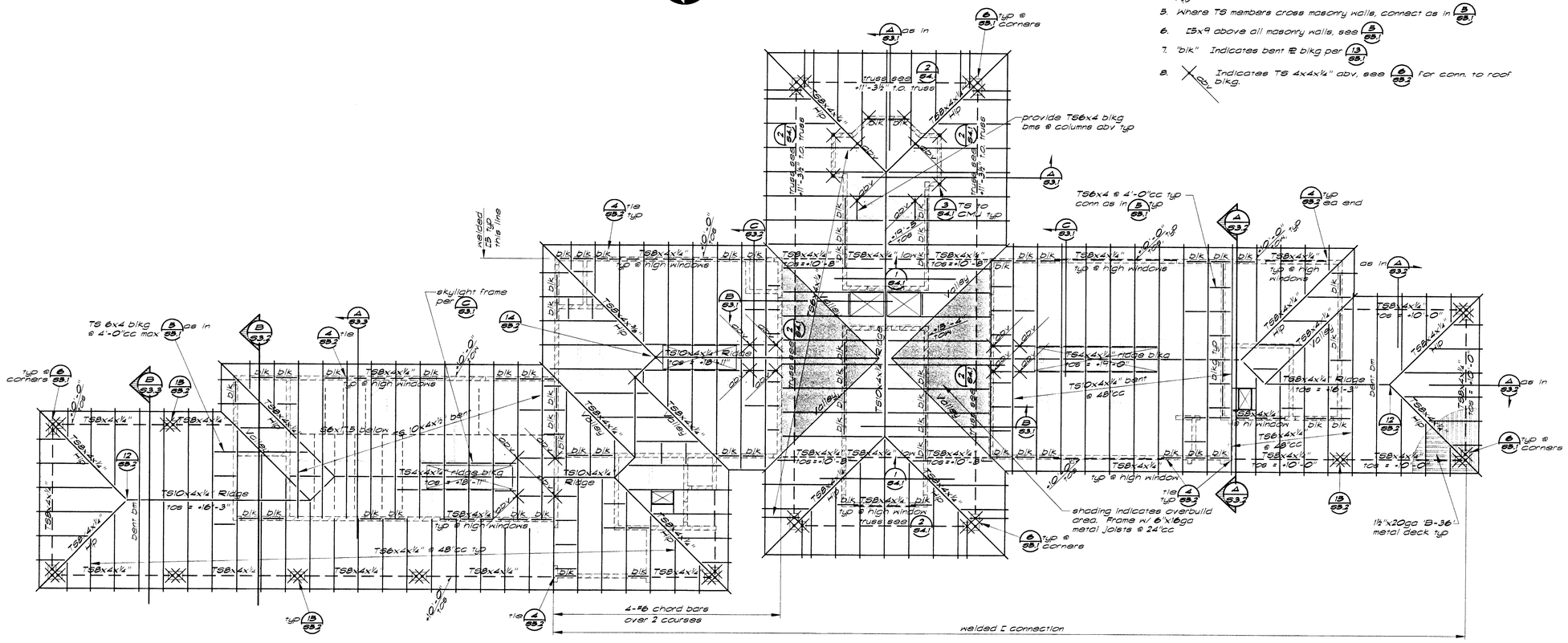
Egress Gate-Roof Plan — ¼"=1'-0"







High Roof Framing Plan — ⅛"=1'-0"



Roof Framing Plan — ⅛"=1'-0"

Roof Framing Plan Notes:

1. Typical decking shall be as shown on plan - see sheet S5.1 for additional information and deck attachments.
2. X Indicates TS column below. See foundation plan for size.
3. See sheet S5.1 and S5.2 for typical steel details, u.n.o.
4. 2½"-1½"/100 Indicates top of steel elevation, u.n.o.
5. Where TS members cross masonry walls, connect as in 5 S5.1
6. I5x9 above all masonry walls, see 5 S5.1
7. "blk" Indicates bent 12 blkg per 13 S5.1
8. X Indicates TS 4x4x¼" abv, see 6 S5.2 for conn. to roof deck blkg.

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BALFOUR ROAD AQUATIC CENTER

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ROOF FRAMING PLANS

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EDWARD S. KNIGHTON
C-015848
REN. 2-28-99
STATE OF CALIFORNIA

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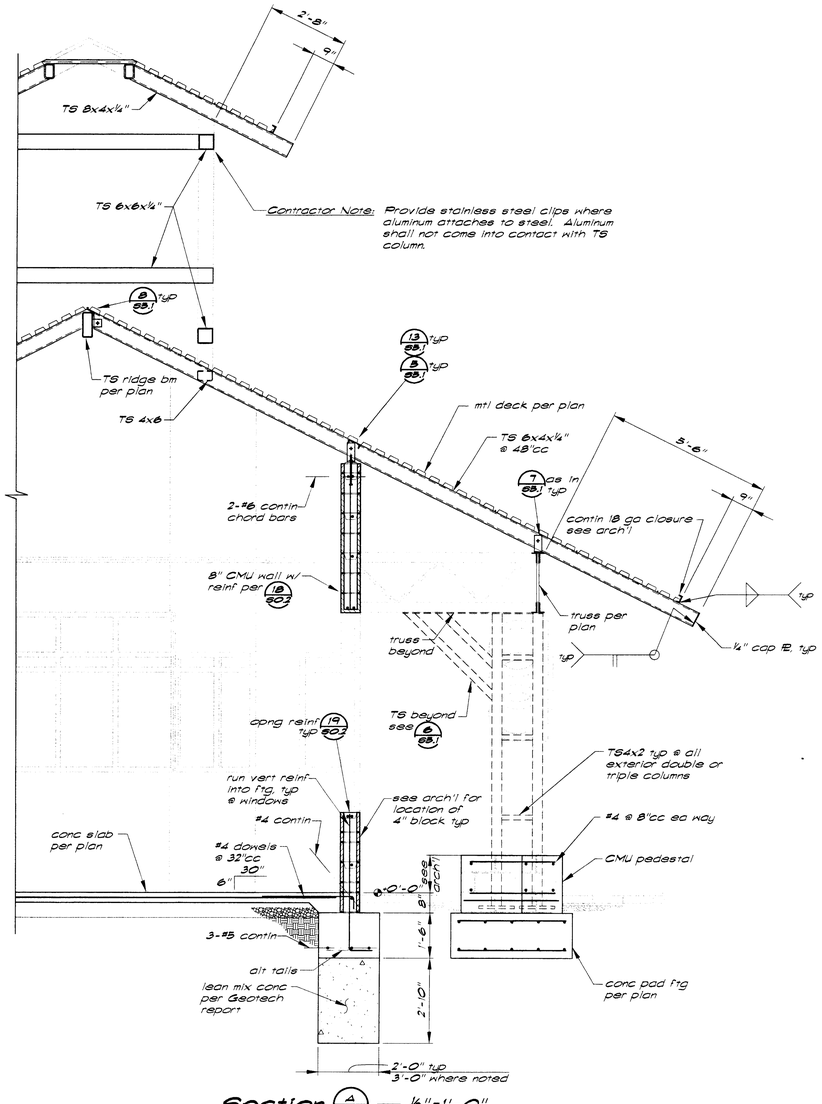
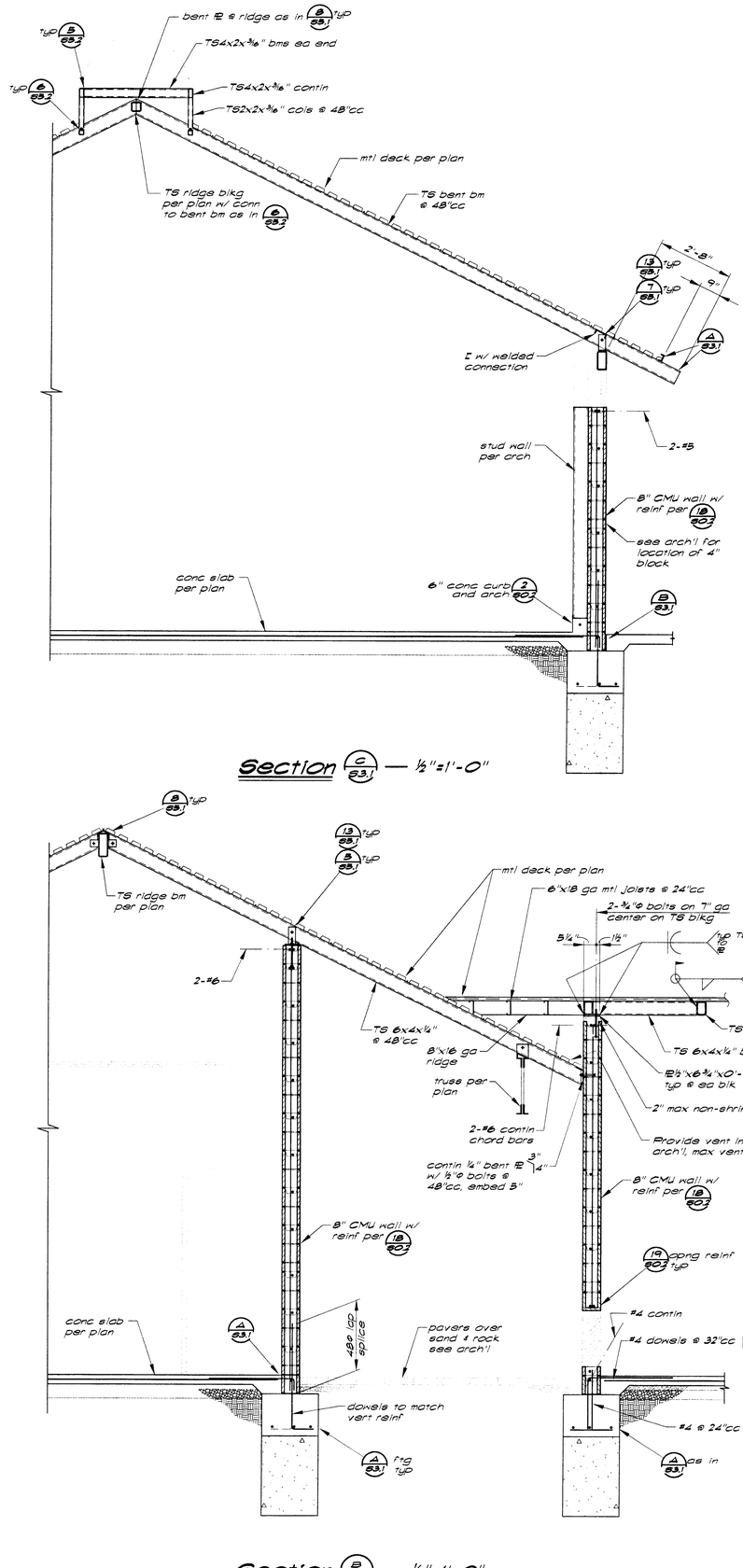
Balfour Road Aquatic Center
Roof Framing Plans



Section A/S3.1 — ½"=1'-0"



Section C/S3.1 — ½"=1'-0"

Section B/S3.1 — ½"=1'-0"

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PROJECT
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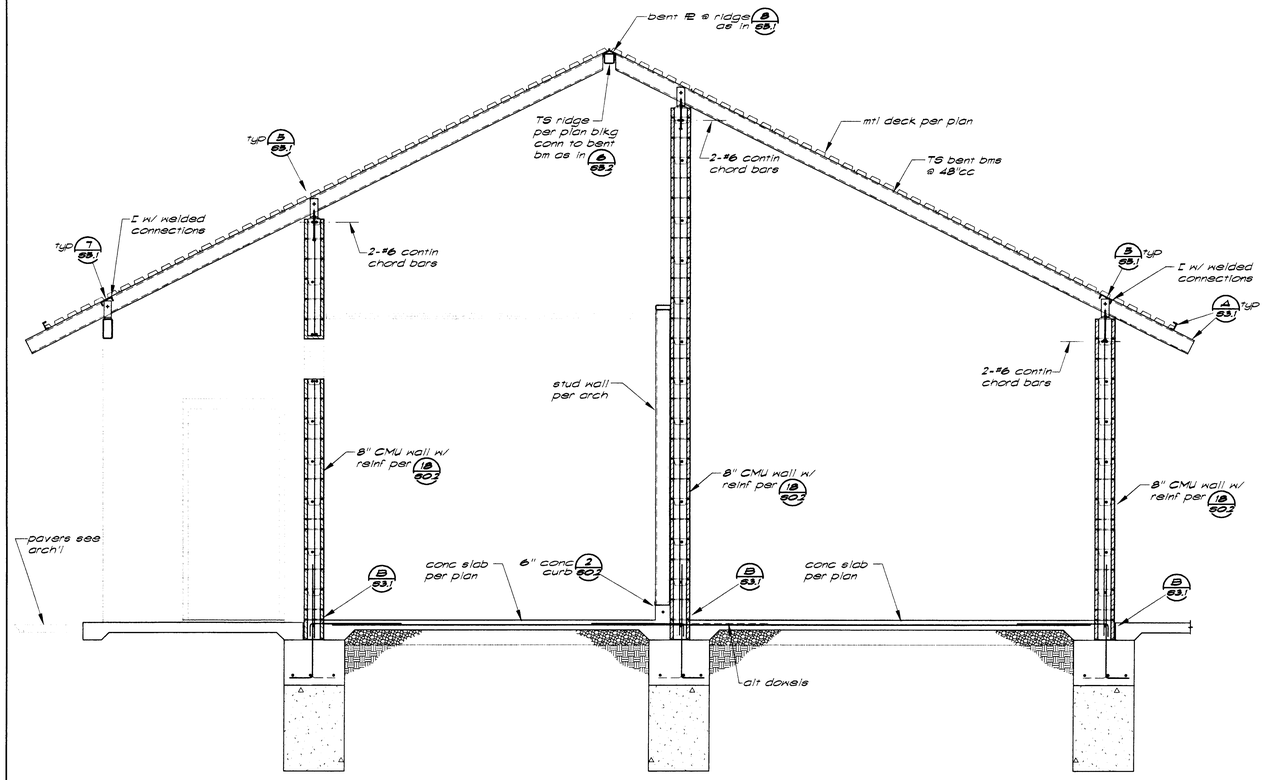
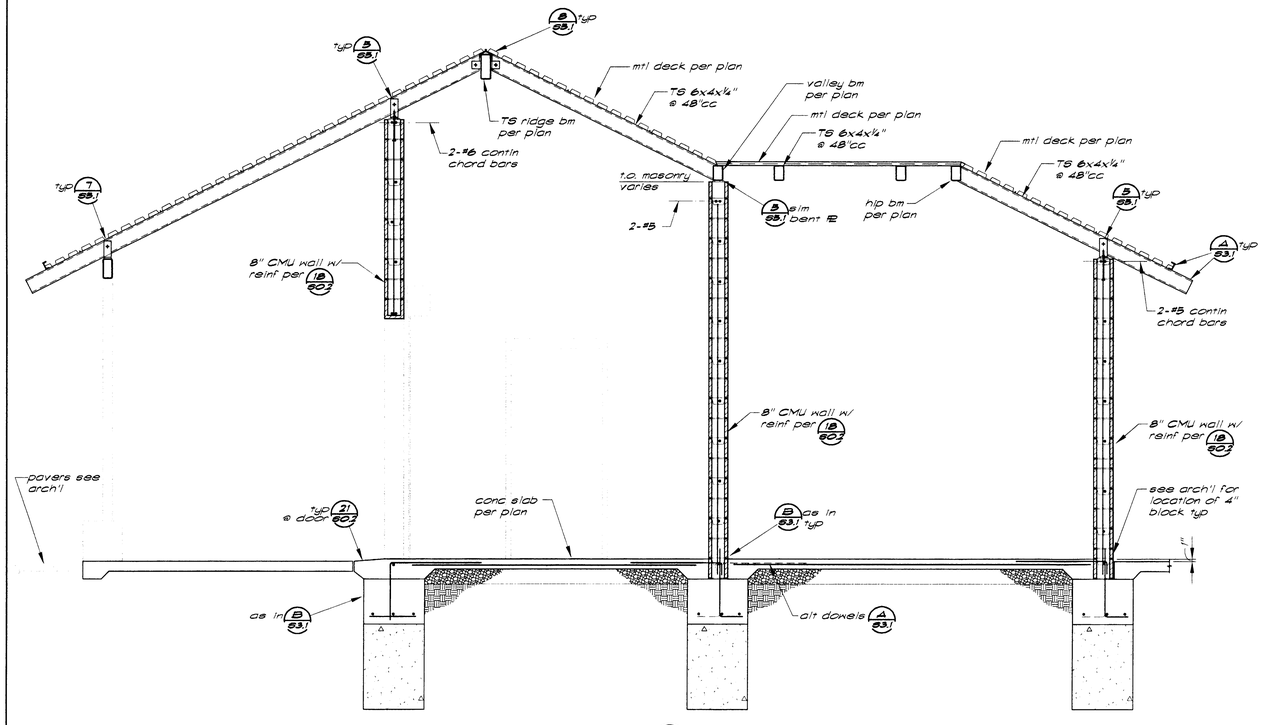
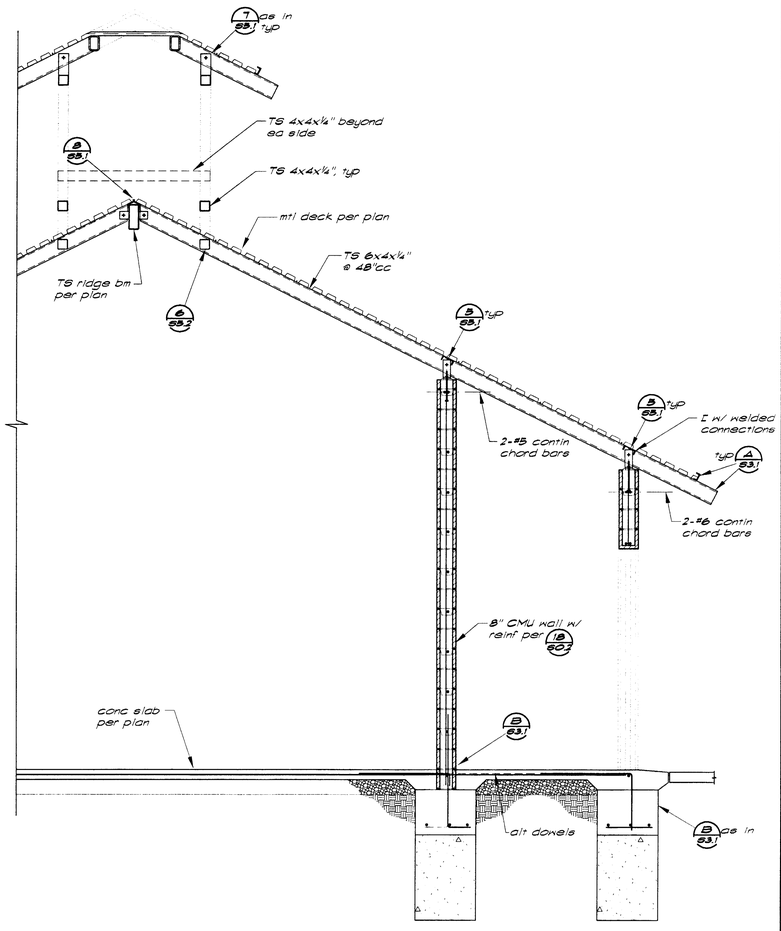
Balfour Road Aquatic Center
Addenda 1
Sections 1



Section A/S3.2 — ½"=1'-0"



Section B/S3.2 — ½"=1'-0"



Section C/S3.2 — ½"=1'-0"

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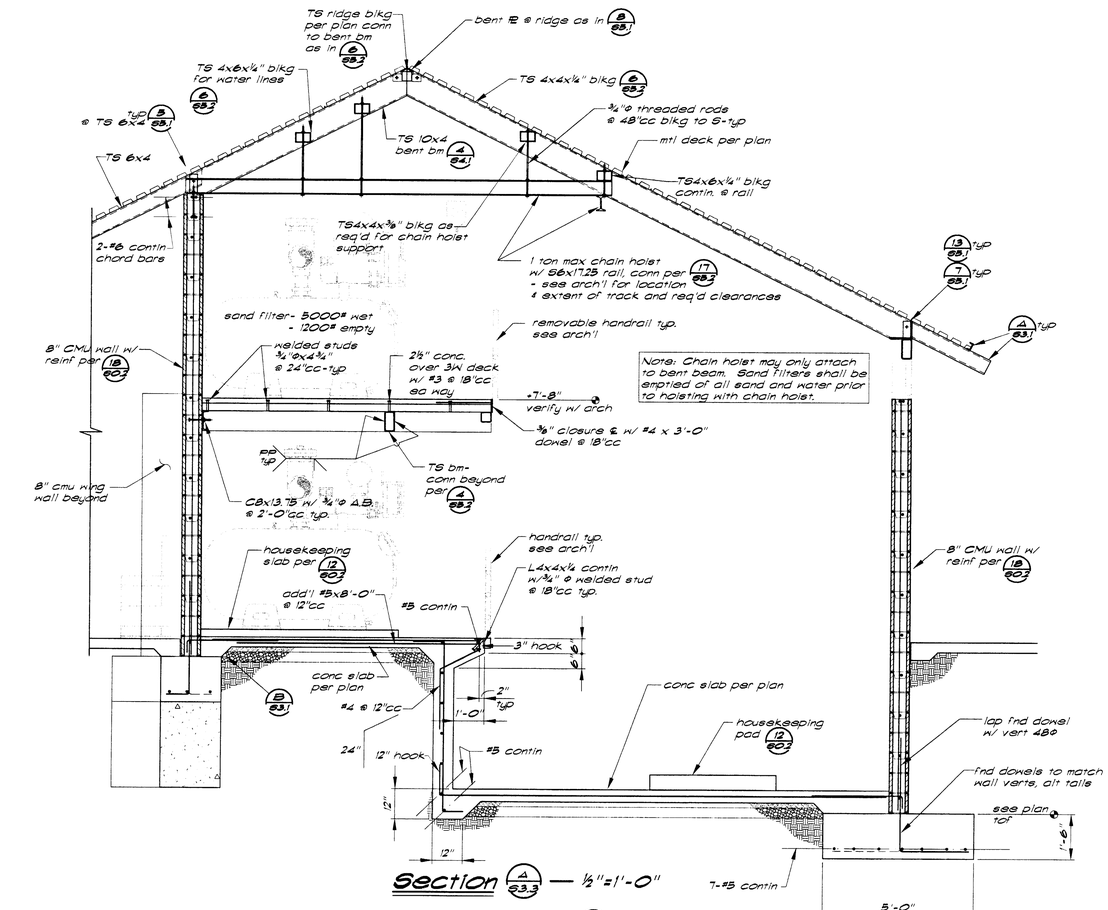
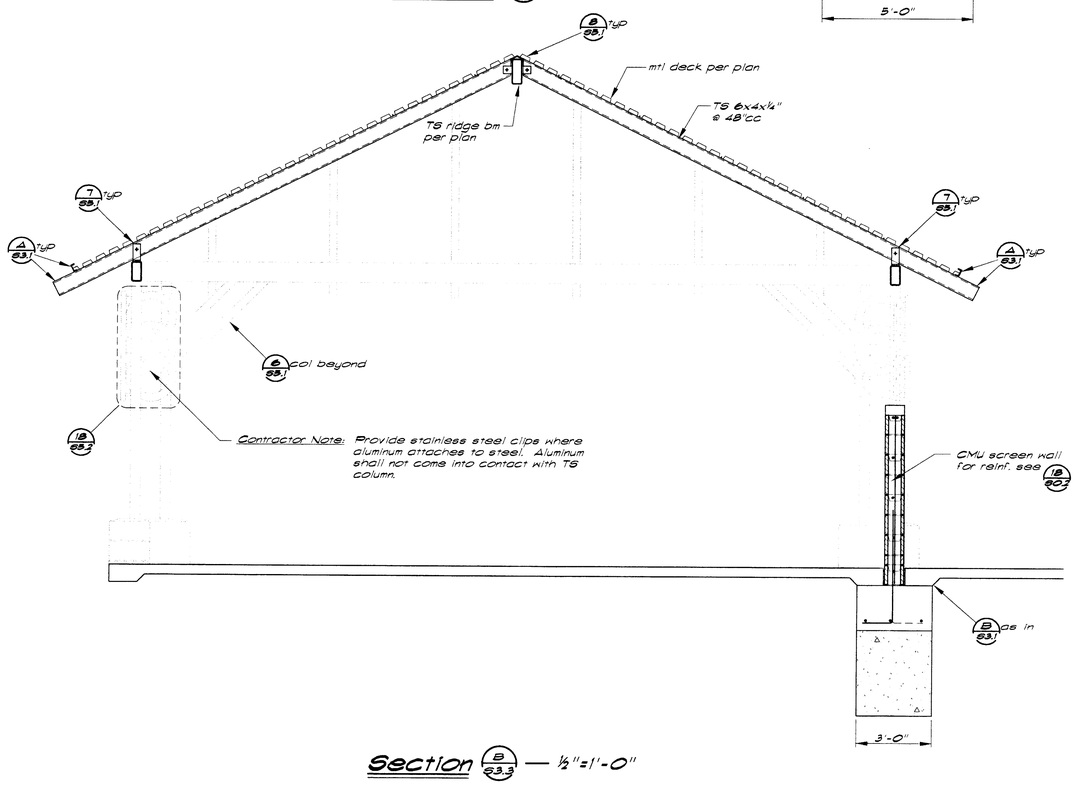
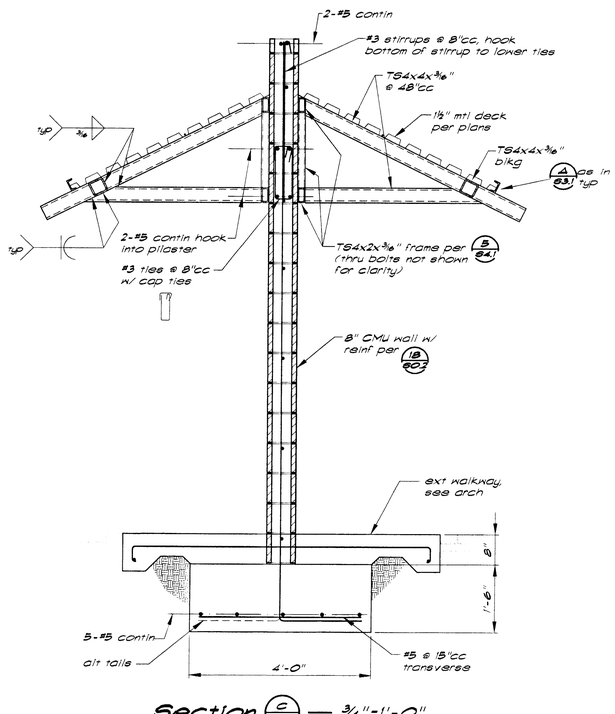
Sections 2



Section Δ/S3.3 — ½"=1'-0"



Section B/S3.3 — ½"=1'-0"



Section C/S3.3 — ¾"=1'-0"

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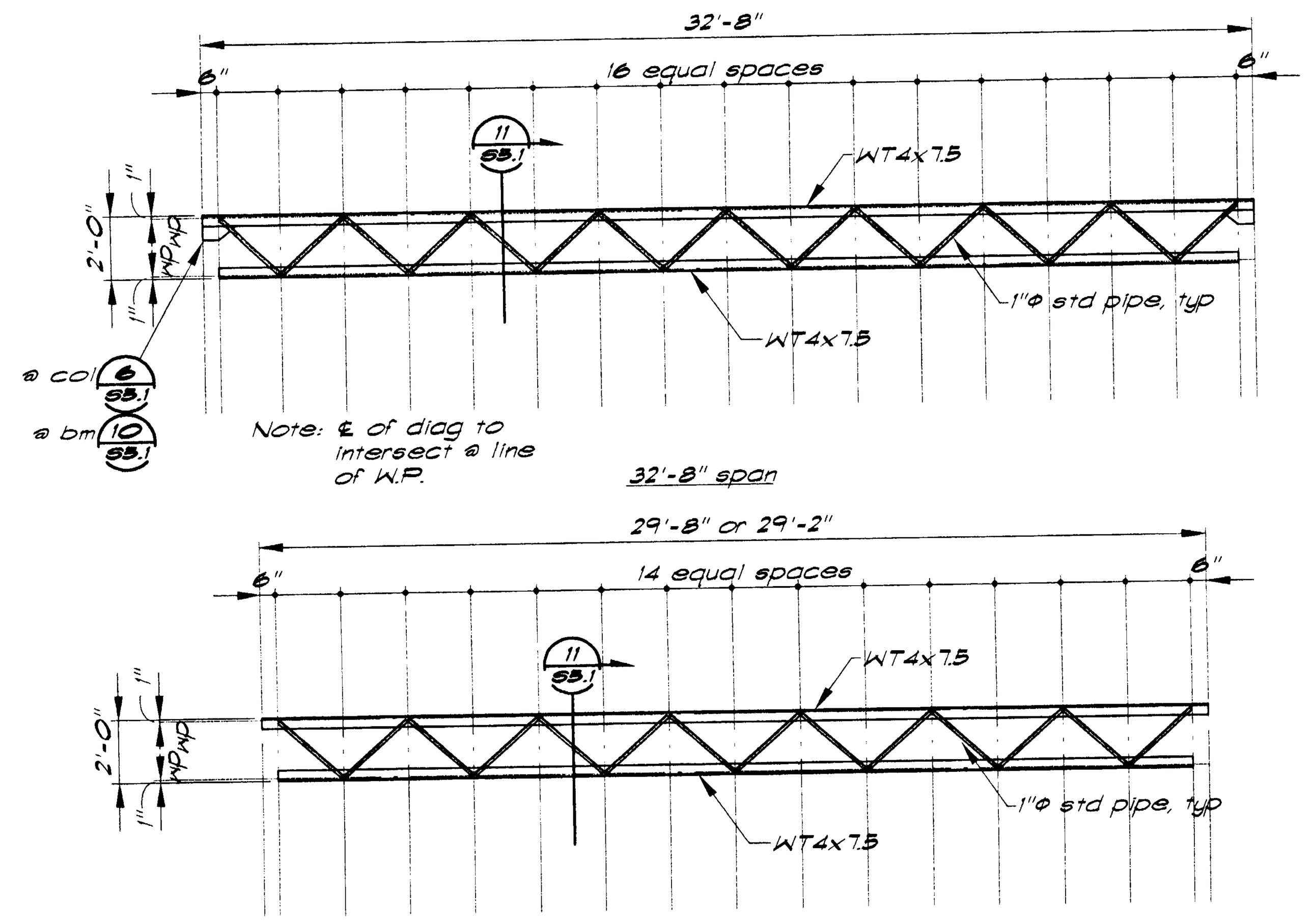
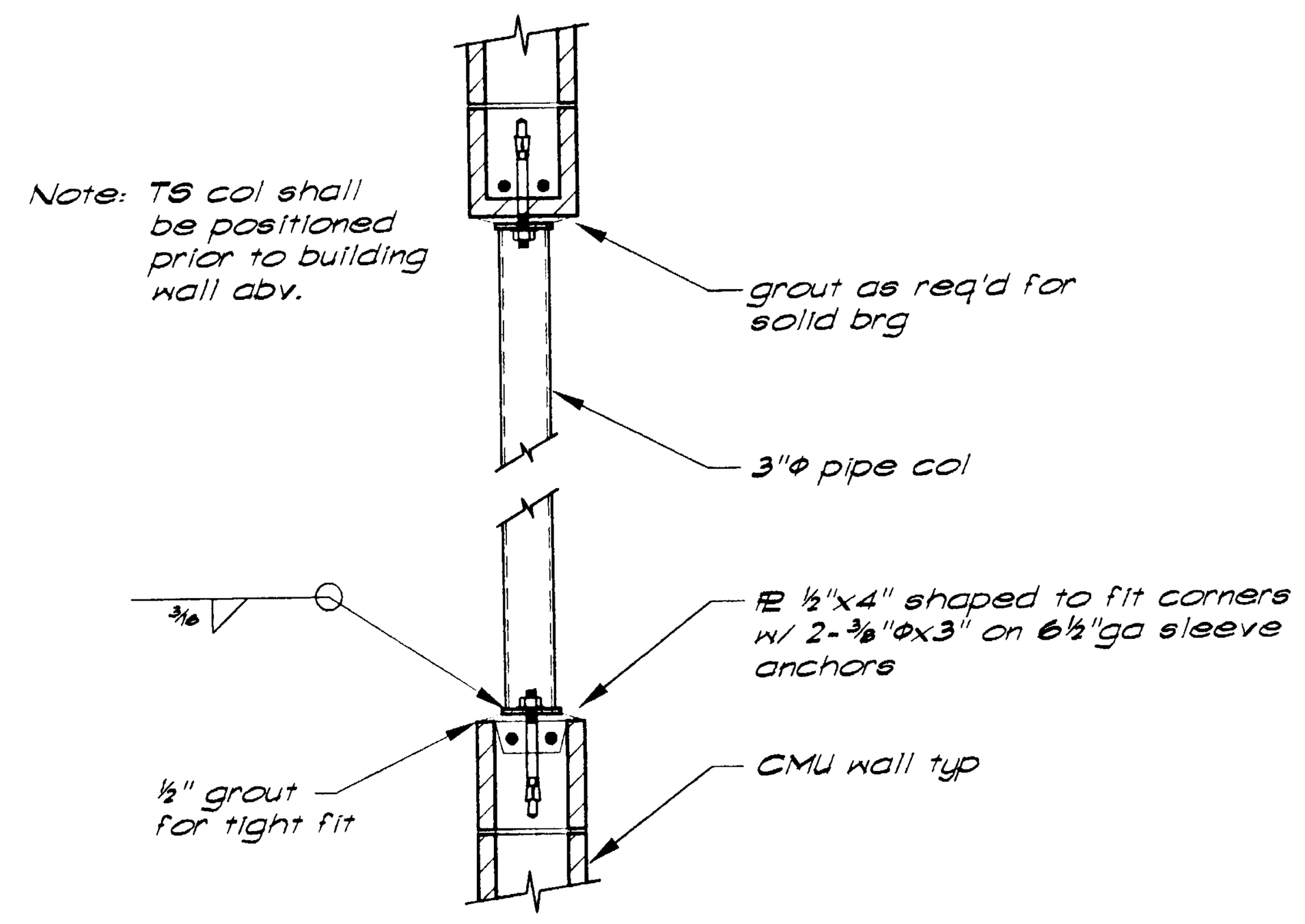
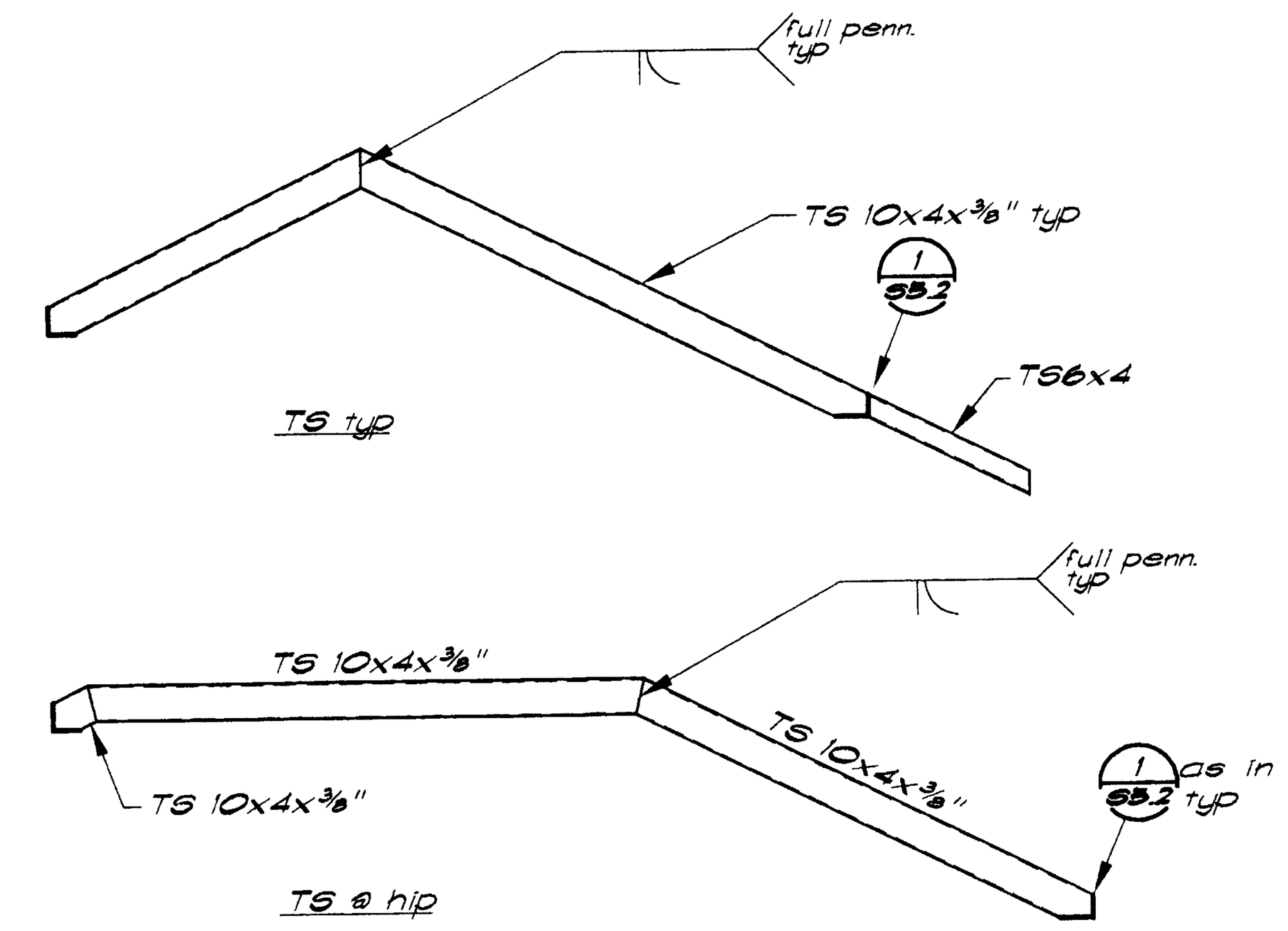
PB 99-1109
Balfour Road Aquatic Center
Structural
Section 3



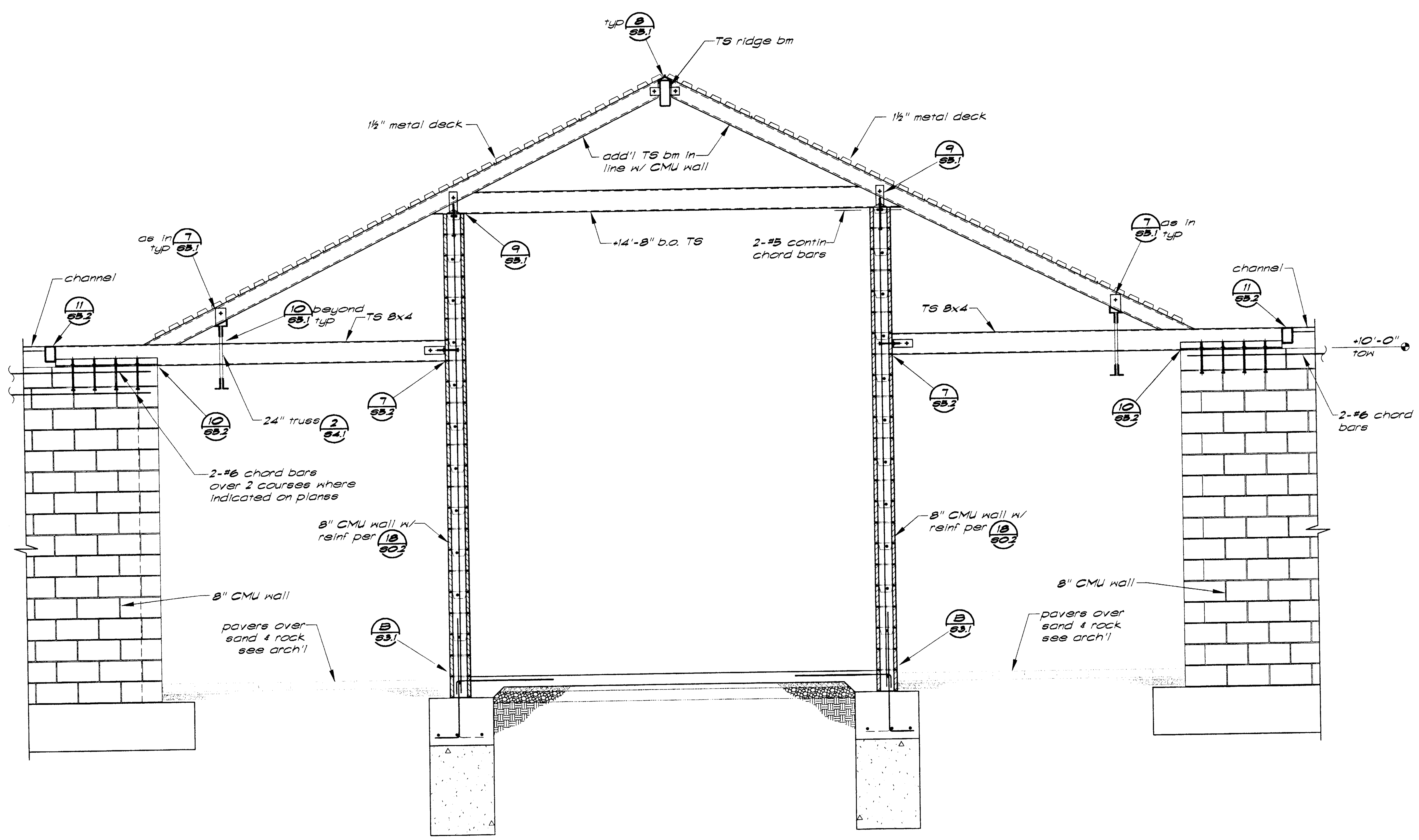
Elevation (2/S4.1) — ¼"=1'-0"



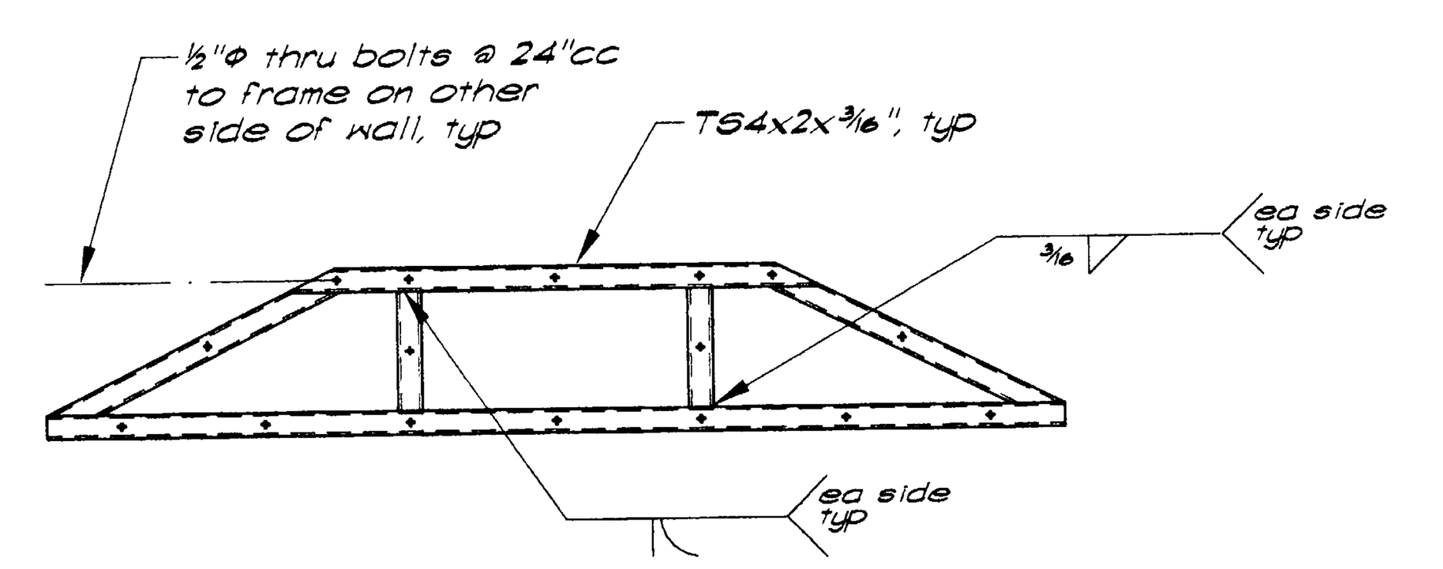
Detail (3/S4.1) — 1"=1'-0"



Elevation (4/S4.1) — ¼"=1'-0"



Elevation (1/S4.1) — ½"=1'-0"



Note: TS beams framing into frame not shown for clarity

See arch for slope and roof extents

Elevation (5/S4.1) — ⅜"=1'-0"

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PB 99-1109
Balfour Road Aquatic Center
Structural
Elevations

Deck Welding Schedule (A/S5.1)

Deck Type	Depth & Gauge	Perpendicular Supports	Parallel Supports	Side Laps	Diaphragm Shear Capacity
B-36 Roof Deck	1½"x20ga	7 PW per sheet	PW @ 8"cc	BP @ 24" cc	670#/'

1. PW= ½ effective diameter puddle weld ; TSW= 1½ min top seam weld ; BP= button punch
2. Metal deck shall be BWP or approved equal, of type and gauge shown on plans and welded as shown above.
3. At composite floor decks, 3/4"ø shear studs may substitute for ¾"ø puddle welds.
4. See (B/S5.1) for typical weld patterns.
5. See (1/S5.1) for metal deck welding at struct steel supports.
6. All metal deck shall have two spans minimum.
7. Provide shoring as required at all decks per mfr recommendations.

Metal Deck Weld Patterns (B/S5.1)

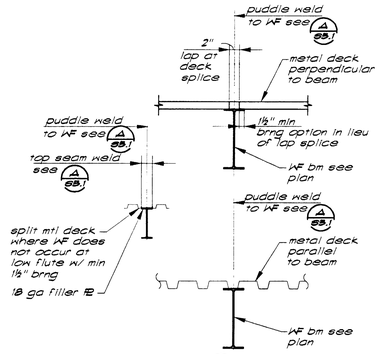
Deck Type	Profile	No. ¾"ø PW per sheet
Type B36	36"	7

Base Plate Schedule (C/S5.1)

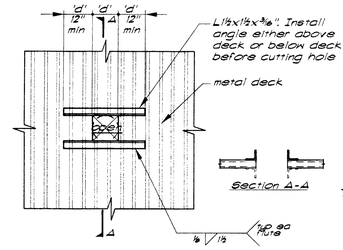
Column Size	Base Plate Size 'A'	'B'	'C'	'D'	'E'	'F'
3x3	⅝"	9"	9"	3½"	2"	7"
4x4	⅝"	10"	10"	5"	2½"	7½"
5x5	1"	11"	11"	5½"	3"	8"
6x6	1"	12"	12"	7"	3½"	8½"
7x7	1¼"	13"	13"	8"	4"	9"
8x8	1¼"	14"	14"	9"	4½"	9½"
10x10	1½"	16"	16"	11"	5½"	10½"
12x12	1½"	18"	18"	13"	6½"	11½"

Notes:
1. Weld 'W' shall be ¼" at base plates ¾" and less, ⅜" at base plates greater than ¾".

S1052001-1

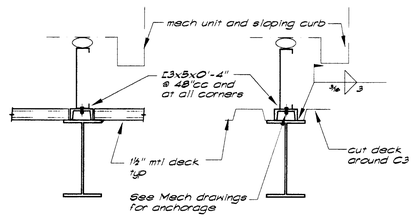


Detail (1/S5.1) — 1"=1'-0"
S1052001-12
Metal deck without concrete to HF beams

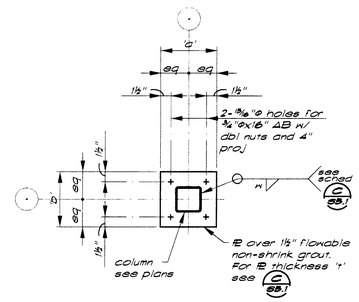


Note: Applies at holes from 6" to 24" wide in metal deck without concrete.

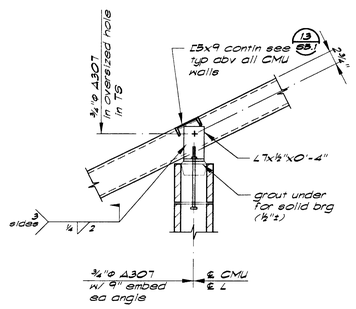
Detail (2/S5.1)
S3050116-12



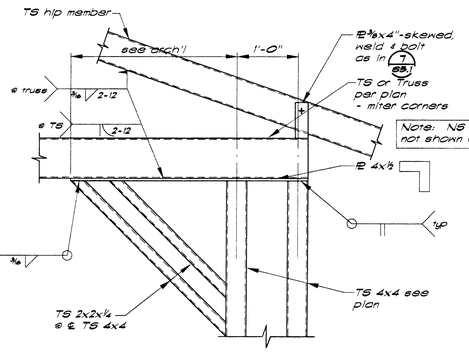
Detail (3/S5.1)
Mech curb at roof deck w/ C3x5
S3011324-12



Detail (4/S5.1)
S1053002-12



Detail (5/S5.1) — 1"=1'-0"



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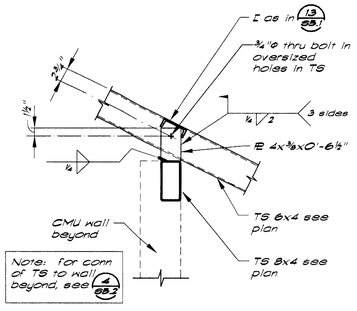
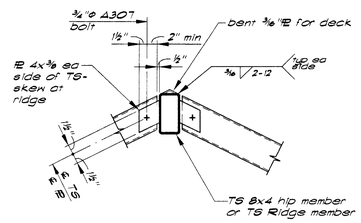
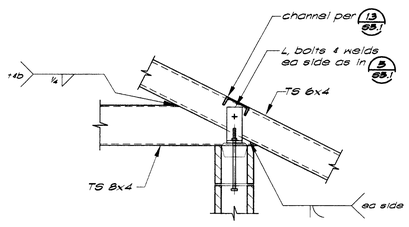


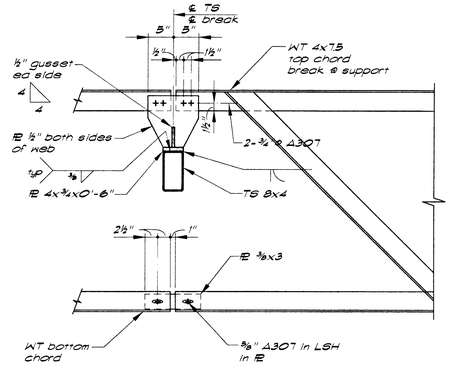
Detail (7/S5.1) — 1"=1'-0"



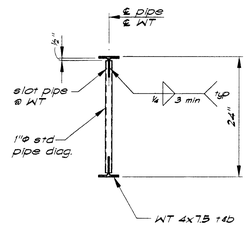
Detail (8/S5.1) — 1"=1'-0"



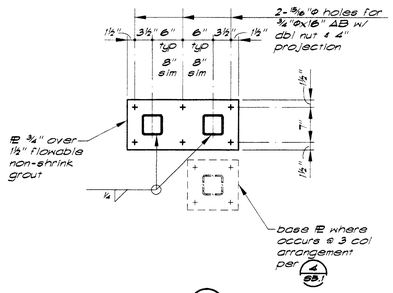
Detail (9/S5.1) — 1"=1'-0"



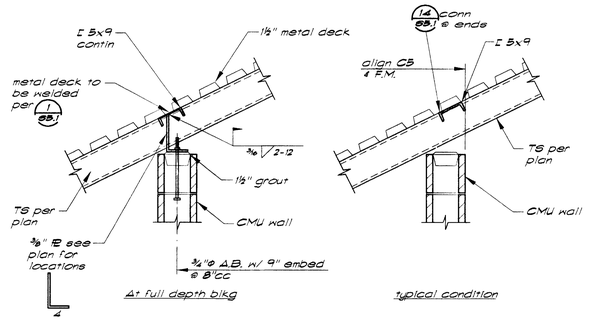
Detail (10/S5.1) — 1"=1'-0"



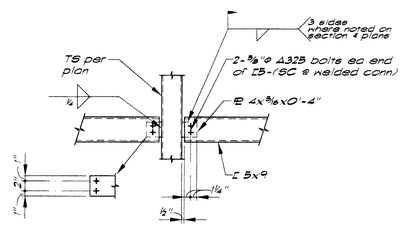
Detail (11/S5.1) — 1"=1'-0"



Detail (12/S5.1) — 1"=1'-0"



Detail (13/S5.1) — 1"=1'-0"



Detail (14/S5.1) — 1"=1'-0"

KEYNOTES

REGISTERED PROFESSIONAL ENGINEER — M. TODD THORP — No. 2990 — Exp. 6/30/00 STRUCTURAL — STATE OF CALIFORNIA

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CONSULTANT

NO.	DATE	REVISION COMMENTS

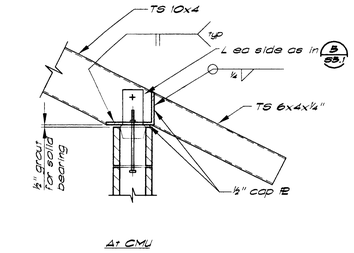
PROJECT: BALFOUR ROAD AQUATIC CENTER

DRAWING TITLE: TYPICAL DETAILS

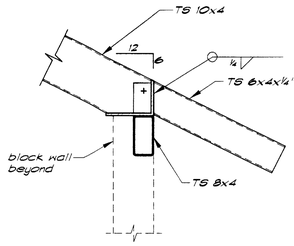
SEAL: LICENSED ARCHITECT — JORDAN S. KNIGHTON — C-015848 — REN. 2-28-01 — STATE OF CALIFORNIA

DRAWN BY: .	PROJECT NO.: 98149
CHECKED BY: BOR	CADD FILE NO.: 10-1
SCALE: AS NOTED	DRAWING NO.: S5.1
DATE: © 02-02-99	
PRINTED: 8-12-99	SHEET . OF .

PB 99-1109
Balfour Road Aquatic Center
Structural
Typical Details

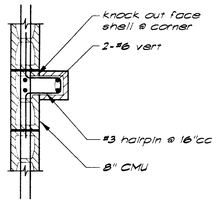


At CMU

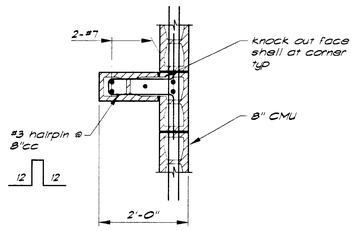


At TS

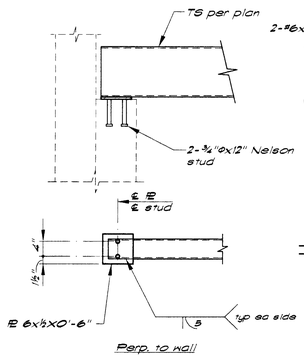
Detail 1/S5.2 — 1"=1'-0"



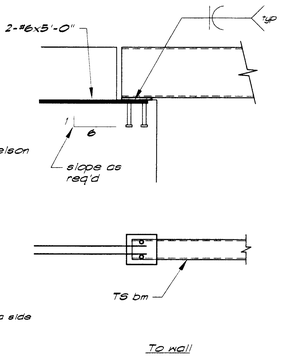
Detail 2/S5.2 — 3/4"=1'-0"



Detail 3/S5.2 — 3/4"=1'-0"

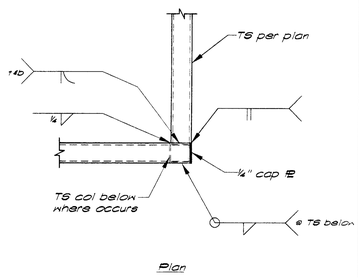


Perp. to wall



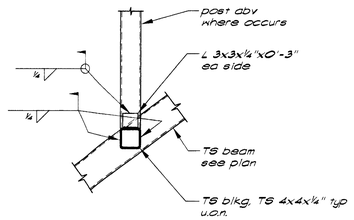
To wall

Detail 4/S5.2 — 1"=1'-0"



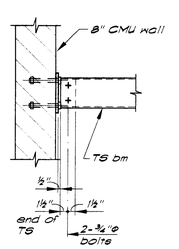
Plan

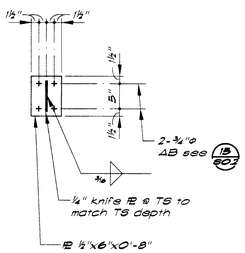
Detail 5/S5.2 — 1"=1'-0"



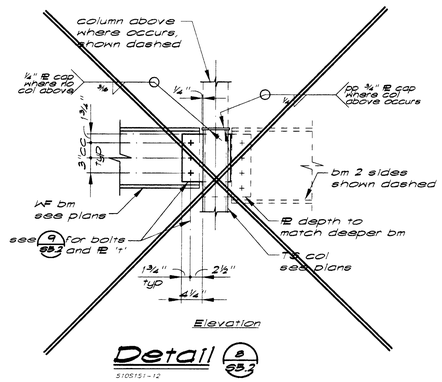
Section

Detail 6/S5.2 — 1"=1'-0"





Detail 7/S5.2 — 1"=1'-0"



Elevation

Detail 8/S5.2

5105151-12

Not Used

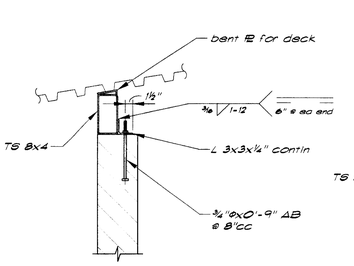
5105150-1

Connection Schedule 9/S5.2

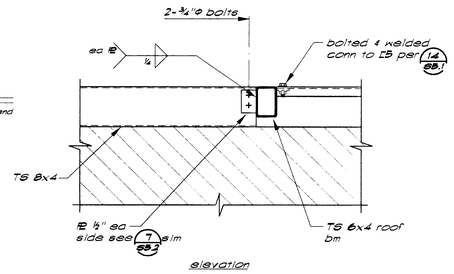
Beam Size	No. 4 Dia. A-325-N Bolts	Shr PL 't'	W
C8 & C10	2 - ⅞"ø	¼"	3/16"
W8 & W10	2 - ⅞"ø	¼"	3/16"
W12 & W14	3 - ⅞"ø	¼"	3/16"
W16	4 - ⅞"ø	5/16	¼"
W18	5 - ⅞"ø	5/16"	¼"
W21	5 - ⅞"ø	5/16"	¼"
W24	6 - ⅞"ø	5/16	¼"
W27	7 - ⅞"ø	5/16"	¼"
W30	8-1"ø	½"	5/16"
W33	9-1"ø	5/16"	5/16"
W36	10-1"ø	5/16"	5/16"

This schedule applies to non-frame connections, typical.

Not Used

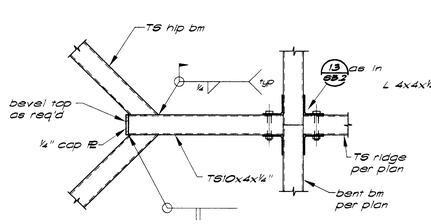


Detail 10/S5.2 — 1"=1'-0"

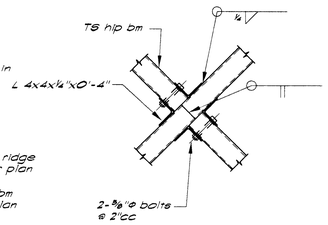


elevation

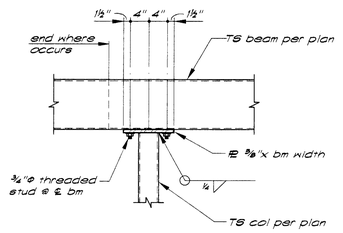
Detail 11/S5.2 — 1"=1'-0"



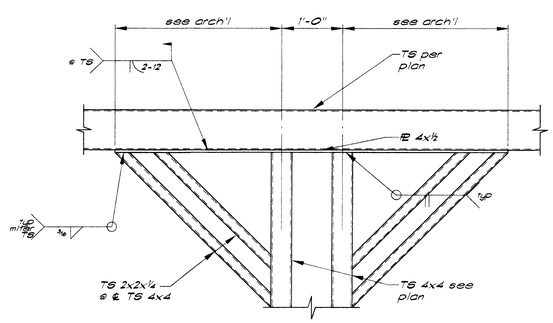
Detail 12/S5.2 — 1"=1'-0"



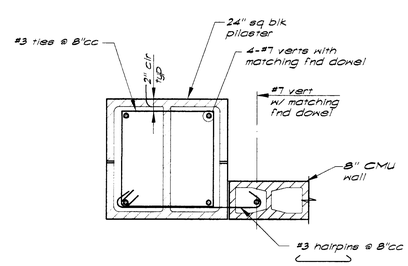
Detail 13/S5.2 — 1"=1'-0"



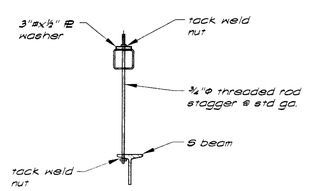
Detail 14/S5.2 — 1"=1'-0"



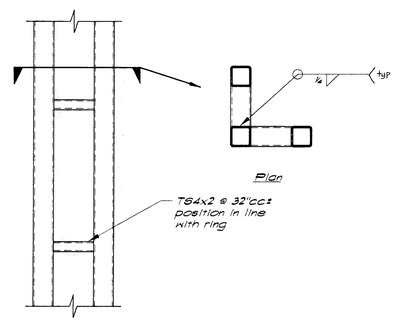
Detail 15/S5.2 — 1"=1'-0"



Detail 16/S5.2 — 1"=1'-0"



Detail 17/S5.2 — 1"=1'-0"



Elevation

Detail 18/S5.2 — 1"=1'-0"

PB 99-1109
Balfour Road Aquatic Center
Structural
Details

KEYNOTES

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CONSULTANT

NO.	DATE	REVISION COMMENTS
1		
2		
3		
4		
5		

PROJECT
BALFOUR ROAD AQUATIC CENTER

DRAWING TITLE
DETAILS

LICENSED ARCHITECT
JORDAN S. KNIGHTON
C-015848
EXPIRES 2-28-99
STATE OF CALIFORNIA

SEAL	DRAWN BY	PROJECT NO.
	IW	98149
	CHECKED BY	CADD FILE NO.
	BOR	A2-1
	SCALE	DRAWING NO.
	AS NOTED	S5.2
	DATE	
	02-02-99	
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	8-12-99	